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INSTRUCTIONAL DESIGN, RECORDED INSTRUCTION AND FACULTY INTERESTS. SUPPLEMENT, INSTRUCTIONAL DESIGN, RECORDED INSTRUCTION AND FACULTY INTERESTS WITHIN THE UNIVERSITY OF CALIFORNIA. OCCASIONAL PAPER NO. 2.

BY- KARWIN, THOMAS J.
SANTA CRUZ UNIV., CALIF.,OFF.OF INSTRUCTIONAL SVCS

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THE SYSTEMS APPROACH TO PLANNING IS USEFUL IN DESIGNING MORE EFFECTIVE AND EFFICIENT INSTRUCTIONAL PROGRAMS. IT SPECIFIES INSTRUCTIONAL OBJECTIVES, COORDINATES APPROPRIATE METHODS, AND EVALUATES THE RESULTING INSTRUCTIONAL SYSTEM. CONFLICTS CAN ARISE FROM INDIVIDUAL INTERPERTATIONS OF INTEREST IN SPECIFIC PROGRAMS. A COMPREHENSIVE, EQUITABLE POLICY OUTLINING THE INTERESTS, RIGHTS, AND RESPONSIBILITIES OF FACULTY, INSTITUTION, AND STAFF IN RELATION TO THE DESIGN AND DEVELOPMENT OF INSTRUCTIONAL PROGRAMS USING NEW MEDIA WILL OBVIATE THESE CONFLICTS. THESE CONSIDERATIONS ARE EXAMINED IN THE ORDER THEY WOULD BE ENCOUNTERED IN A DESIGN PROJECT. POLICY DECISIONS ON CONTRACTS, OBLIGATIONS, AUTHORSHIP, SUBSEQUENT USE OF THE MATERIAL, TERMS OF PUBLICATION, COPYRIGHTS AND AUTHORITY MUST BE SET OUT IN PLANNING THE PROJECT AND IN CONDUCTING IT. THESE DECISIONS PROVIDE A BASE FOR POLICY DESIGNED TO ENCOURAGE AND FACILITATE THE REALIZATION OF THE POTENTIAL OF INSTRUCTIONAL SYSTEM DESIGN. APPENDED ARE TWO CASE STUDIES OF INSTRUCTIONAL DESIGN. A SUPPLEMENT, WITH ITS APPENDICES, REVIEWS POLICIES AND REGULATIONS OF THE UNIVERSITY OF CALIFORNIA WITH RESPECT TO THE BASIC CRITERIA PRESENTED IN THE PAPER. (MT)

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University of California, Santa Cruz
Office of Instructional Services

OCCASIONAL PAPER NO. 2

INSTRUCTIONAL DESIGN, RECORDED INSTRUCTION AND FACULTY INTERESTS.

Thomas J. Karwin

April, 1968

EM 006 680

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I am also very grateful to Jo Ann Badeaux for her editorial guidance and supervision of the preparation of the manuscript.

Thomas J. Karwin

FOREWORD

The report of a recent joint conference of the U. S. Office of Education and the Society of Motion Picture and Television Engineers presents this picture of the current state of educational crisis in America.

"American education is in violent ferment. Concurrently, four explosive influences are at work:

> "1. The population explosion: A bumper crop of students is overtaxing the nation's school facilities. Maintaining and improving the quality of general education in the face of this increase in the number of pupils is a major problem.
>
> "2. The knowledge explosion: Modern, more scientific methods of scholarship are drastically changing the content of even traditional subject areas. In addition, the rate at which human knowledge is expanding in the field of science means that there is hardly a segment of the school curriculum which is not undergoing drastic change.
>
> "3. The psychology-of-learning explosion: Recent advances in psychology are having, and will have, great influence on our future approach to the teaching-learning process. Progress in numerous scientific disciplines indicates that man is on the threshold of learning how the mind itself works. Efforts in this direction are already affecting teaching methodology.
>
> "4. The instructional technology explosion: The whole complex of new audio-visual tools and techniques offers exciting vistas for improvement in the teaching and learning process."

To keep up with these four concurrent explosions, new "power tools of learning" will be needed to replace the "hand tools" of the past. The Santa Cruz Academic Plan recognizes this when it states that the teaching staff will be encouraged to experiment with new materials and mechanical devices in order to achieve more efficient use of faculty time and energy and commits the campus to develop new methods of instruction that will be up-to-date in the twenty-first century.

Schools throughout the nation have responded in various ways to the challenge of these pressures and some trends in the patterns of teaching have already begun to emerge which draw upon the unique potentials of the new educational media.

Expansion of the teaching-learning environment. The new media are being employed increasingly to bring the world outside the classroom into the classroom. Similarly, the events which occur within the classroom are being offered increasingly to learners in other places. The traditional physical and temporal limits of classrooms are beginning to break down as these new media are put to use in recording and disseminating widely the instructional events basic to individual learning. Lectures and demonstrations, presented in one time and place, increasingly are being recorded and disseminated to learners at other times and in other places, thereby extending almost without limit the number of students who may be served by a single lecture-demonstration event. The media are being employed increasingly to illustrate, to illuminate, and to enrich lectures and demonstrations so that increasing numbers of students are able to achieve more varied experience and more learning in this expanded environment than in the traditional classroom environment.

Individualization of Instruction: The instructional process itself is coming to provide for increased individual freedom for students to pursue their own educational directions and to take greater responsibility for defining and achieving their own learning goals. The role of the teacher is visibly changing from that of disseminator of information to that of molder, shaper and prescriber of individualized learning plans for individual students. The emergence of a rich tutorial relationship between students and teachers and an individually "tailored" curriculum for every student are seen as important trends made possible by the new information technologies. In higher education there is an increasing presence of individual study spaces equipped to permit students to avail themselves of vast repositories of stored information, study materials, and individually planned self-instructional programs. Data banks increasingly are moving toward interconnection throughout the country, even extending to other countries. In the foreseeable future, the student in his "Q-space" will be able to draw upon aural and visual information packages stored in distant repositories. Thus, the opportunity is increasing every day for the student to efficiently and effectively pursue learning of his own choosing in his own style, and at his own rate under the tutorial guidance of his teachers.

Reorganization of Instructional Resources: Efforts are increasing, employing the methods of operations analysis developed in industry, to redeploy institutional resources into new patterns for achieving educational goals. Through an analysis of learning objectives and a careful review of the available faculty time, facilities, equipment and funds, these resources are being assembled into innovative teaching systems which more effectively achieve their goals in an efficient manner. Where course redevelopment of this sort has occurred, the new instructional media have come to play an important role in the total instructional systems that have developed. As pressures upon our educational systems mount to teach more content to more students with proportionately fewer teachers, efforts to redeploy resources into more effective patterns will inevitably continue to increase. It is to be expected that the emergent instructional patterns will make increasing use of instructional media to store and disseminate information thereby achieving more efficient use of faculty time and energy.

Evaluation activities: At all levels of public education efforts are increasing to assess empirically the effects of instruction and the impact of particular academic experiences upon individuals. Institutions of higher learning are exhibiting increasing awareness of the need to evaluate their academic programs in terms of observable results. The instructional media are being employed at many stages in this process to crystallize specific instructional events into reproducible forms for objective study, as well as to record and analyze growth and change in student academic and social performance.

These trends and developments in education, particularly in universities and colleges, will require new ways of looking at recorded instructional materials and systems. The magnitude of the institution's investment in developing television, film and programed learning materials for use in the academic program implies an important stake in the benefits to be derived. The traditional postures of the university with respect to faculty-authored books may not apply with equal facility to materials prepared in these new media. Yet the policies of most universities in this regard seem to be relatively straightforward extensions of these earlier policies and, as such, have led to inconsistency and uncertainty when applied to development projects in the new media. The university's investment of resources on such projects at least equals the investment of faculty time and creative effort, yet the issues of copyright, ownership, publication and use of the resulting products are cloudy and largely unresolved.

The concern of the Office of Instructional Services at the University of California, Santa Cruz, in these matters derives from its responsibility for developing instructional media programs on its own campus. It was in this interest that the present study was undertaken. The general nature of the problem, however, is far from provincial in its scope and we are led to share this work in the hope it may be useful to others.

Marvin J. Rosen
Coordinator, Instructional Services
April, 1968

PREFACE

The purpose of this paper is to focus the attention of faculty members and administrators of institutions of higher learning on their respective interests in certain new methods of designing, conducting, and evaluating instruction. An underlying assumption is that a clear and equitable set of policies with respect to these interests is needed to support and encourage the use of innovative instructional practices.

Because policy is regarded as an important foundation for innovations, the conclusions of this discussion are intended to serve as policy considerations. To be sure, we are already awash with policies: the suggestion that we add more may be unpopular, and for good reasons. But it seems essential that some formal statements be made in recognition of the interests discussed herein, and policy statements are the established means of clarifying institutional positions.

It is hoped that the following discussion will stimulate, and assist in such clarification with respect to innovation in instruction.

Thomas J. Karwin
April, 1968

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INTRODUCTION

The Problem

We are part of an era of remarkable intellectual development: the many discussions of the "knowledge explosion," and of the resultant increasing pressures on our educational institutions for more and better instruction have become a part of our lives.

The problem, basically, is that we must accommodate increasing numbers of students, while improving the quality of instruction. This circumstance suggests that we provide greater support for education, and that we introduce techniques designed to improve the efficiency and effectiveness of our instructional programs(6). The situation is made more difficult by the threat of having available proportionately smaller numbers of faculty members(11).

Improving the efficiency of our instructional programs requires better use of faculty, staff, and student time, and better use of facilities, supplies and other resources. Efforts to improve the effectiveness of instruction may lead to:

1. Reduction in the faculty/student ration, particularly through the direct or indirect use of recorded instruction;
2. Increases in the responsibility students assume for their own instruction, as in independent study of "packages" of instructional materials, and
3. Increases in the emphasis given to demonstrations of the effectiveness of instruction.

These anticipated changes in the manner in which instruction is conducted involve the use of the various instructional media provided by our technologically prolofic society, but they also introduce a pressing need for new tools for the analysis and organization of the instructional process. The traditional methods of instructional design have served well, but they depend on the resources of a single person, typically, and they treat design and evaluation at the level available to an individual working alone.

Method: The Systems Approach

These problems faced by educators are analogous to the problems faced in military and industrial situations, where the pressures of competition, international tensions, and complex technologies have demanded new tools in the analysis of requirements and the development of the best methods of meeting these requirements. Military and industrial planners have developed a range of tools to assist them in this work. These tools are procedures which are systematic, comprehensive, detailed approaches to the development of the solutions to problems. These procedures have been called "systems analysis," "operations analysis," or "configuration analysis," but they are all, generically, applications of the systems approach.

The systems approach has been described as the "... application of scientific methods and tools to the prediction and comparison of the values, effectiveness, and costs of a set of alternative courses of action ..." (14:199). In practice, this approach involves these basic steps:

1. Specification of objectives (usually in terms of an observable result);
2. Selection of the most efficient approach to accomplishing these objectives (after considering all available means);
3. Application of the selected approach;
4. Evaluation of the effectiveness and efficiency of the approach in terms of the specified objectives.

This approach differs from more familiar approaches to planning in that it is highly systematic, it places greater emphasis on making the goals explicit, and it tests the extent to which the program meets its goals.

It is clear that this approach is applicable to many types of planning, including instructional design.[1] The specific procedures chosen for this application will differ according to the interests and competences of the planner(s). One set of procedures, developed as a part of a Federally sponsored research project at Michigan State University, is shown in diagrammatic form on Page 3.

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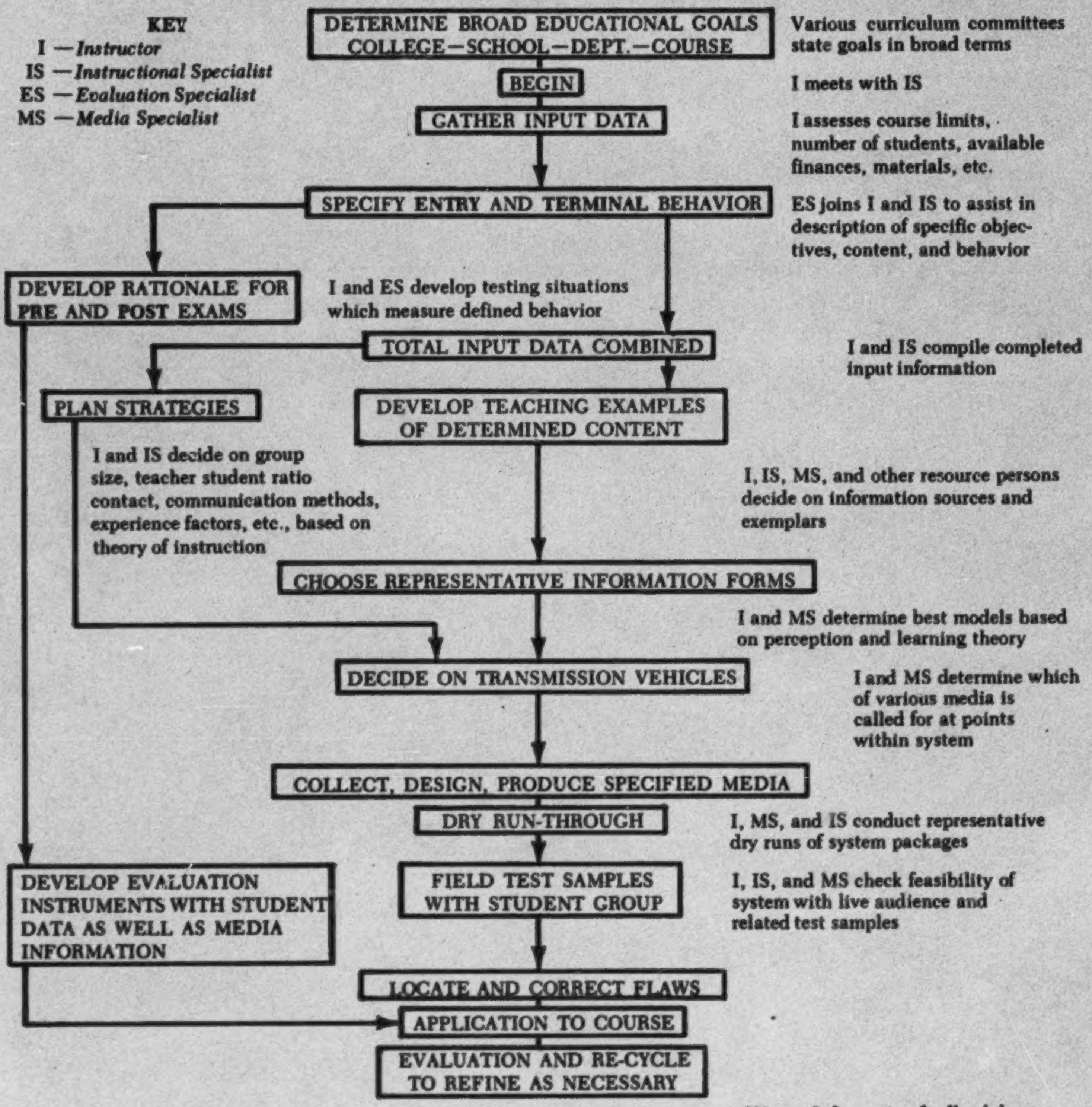
[1] Discussions of the application of the systems approach to instructional design are rare, primarily because this technique is still in development. The literature of instructional technology, however, includes many papers which, while less than definitive, provide valuable discussions of various aspects of this process. Of particular interest as an introduction is The Design of Instructional Systems, by R.G. Smith, Jr.(23). Two case studies of systematic instructional design are included for reference as an Appendix to this discussion.

A FLOW CHART* OF PROCEDURES FOR ANALYSIS OF INSTRUCTION AND IMPLEMENTATION OF NEWER MEDIA OF COMMUNICATIONS (36)


KEY
I —Instructor
IS —Instructional Specialist
ES —Evaluation Specialist
MS —Media Specialist
DETERMINE BROAD EDUCATIONAL GOALS COLLEGE—SCHOOL—DEPT.—COURSE
Various curriculum committees state goals in broad terms
BEGIN
I meets with IS
GATHER INPUT DATA
I assesses course limits, number of students, available finances, materials, etc.
SPECIFY ENTRY AND TERMINAL BEHAVIOR
ES joins I and IS to assist in description of specific objectives, content, and behavior
DEVELOP RATIONALE FOR PRE AND POST EXAMS
I and ES develop testing situations which measure defined behavior
TOTAL INPUT DATA COMBINED
I and IS compile completed input information
PLAN STRATEGIES
I and IS decide on group size, teacher student ratio contact, communication methods, experience factors, etc., based on theory of instruction
DEVELOP TEACHING EXAMPLES OF DETERMINED CONTENT
I, IS, MS, and other resource persons decide on information sources and exemplars
CHOOSE REPRESENTATIVE INFORMATION FORMS
I and MS determine best models based on perception and learning theory
DECIDE ON TRANSMISSION VEHICLES
I and MS determine which of various media is called for at points within system
COLLECT, DESIGN, PRODUCE SPECIFIED MEDIA
DRY RUN-THROUGH
I, MS, and IS conduct representative dry runs of system packages
DEVELOP EVALUATION INSTRUMENTS WITH STUDENT DATA AS WELL AS MEDIA INFORMATION
FIELD TEST SAMPLES WITH STUDENT GROUP
I, IS, and MS check feasibility of system with live audience and related test samples
LOCATE AND CORRECT FLAWS
APPLICATION TO COURSE
EVALUATION AND RE-CYCLE TO REFINE AS NECESSARY

*Note: Information feedback loops have been deleted from this illustration.

The product of systematic instructional design may be called an instructional system:

> An instructional system is a complex consisting of the following components: learner(s), and a combination of instructor(s), material(s), and technician(s), given certain inputs and designed to carry out a prescribed set of operations. This set of operations is devised and ordered according to the most recent and pertinent evidence from research and expert opinion such that the probability of attaining the output, specified behavioral changes in the components, is maximal(3:378).

The instructional system provides the answers to these three basic questions: "What is to be learned?", "How will it be learned?", and "How will we know that it has been learned?". Answering these questions requires a considerable effort, which is aided by the availability of a systematic procedure, described below.

1. Specification of Instructional Objectives

Objectives should be stated in terms of specificable, observable changes in the learner's behavior, both to facilitate planning of the method of instruction, and to permit evaluation of the success with which the objectives have been met.

Stating objectives in terms of the changes in the learner's behavior is a demanding process, requiring time and patience, and is usually avoided for these reasons by instructors. Also, some instructors reject behavioral objectives [1] on the grounds that the important goals in their disciplines involve "appreciation," "understanding," "*real* understanding," and the like, rather than what the student can *do* after instruction.

The broadest goals of education, quite properly, list generalized appreciations, attitudes, understanding, and abilities as desirable. These goals cannot be dismissed as "meaningless," but it should be recognized that the instructor who endeavors to develop some "understanding" in his students has little to guide his efforts unless he translates that vague goal into a series of specific behaviors which demonstrate "understanding" of the type desired. For example, compare these objectives:

---

[1] The reader who is unfamiliar with the distinction between behavioral and non-behavioral instructional objectives is referred to the texts by Bloom, Krathwohl, and Mager listed in the Bibliography (5, 10, 12).

A. The learner will understand the history of ideas in England, in the context of social, emotional, and intellectual influences.

B. The learner will identify the major social influence on the history of scientific ideas in England, and describe the effects of those influences.

Objective "A," which is stated in non-behavioral terms, is suitable as a course objective, but is difficult for the instructor to teach, and for the learner to achieve. Objective "B" (one of a series which can be derived from "A") provides considerable guidance for the instructor and for the learner. The most important characteristic of "B" is the specification of the desired behaviors of the learner.

The specification of objectives, then, defines the content of the course and provides a basis for evaluation (see below). Ideally, these objectives will include the essential aspects of the area of study, and they will give due consideration to the duration of the course, the preparation and ability of the students, and the relationship of the course to more advanced courses.

The specification of instructional objectives in behavioral terms is more than merely desirable: this specification must be regarded as a basic requirement of systematic instructional planning.

2. Design of the Instructional Method(s)

Given the specification of objectives, the next step is to select the most efficient and effective means of accomplishing those objectives. Note that the most efficient and most effective means are not necessarily the most convenient or the most familiar, suggesting that this process will involve careful weighting of alternative approaches to meeting the requirements implied by the objectives.

During this stage of the instructional design, it is appropriate to consider such matters as the optimal groupings of students, the role of independent study, and the use of recorded instructional materials, the latter being of greatest interest in the present discussion.

"Recorded instructional materials" are defined, for the purposes of this paper, as mediated instruction, in any form, from which students learn without the direct involvement of the instructor.

This concept excludes the familiar "audio-visual aids" used by an instructor in the classroom; it includes assigned readings, audio recordings, and motion pictures, as forms already in common use. It also includes several forms which are not yet in common use, such as television recordings, programed instruction, computer-aided instruction, and a wide range of audio-visual materials arranged for independent study (such as 8mm film loops and tape recordings). This concept of recorded instructional materials will also include other, unspecified forms of mediated instruction which will be developed in the future.

Systematic instructional design can be expected to lead to greater use of recorded instructional materials because (a) information held in storage is more accessible than information which exists in ephemeral forms (as in the case of face-to-face lecture), (b) instructional recordings can be prepared with greater care than the conventional lecture-demonstration, since their life can extend over several uses (given appropriate revisions), and (c) instructional recordings can free the instructor for closer contact with his students by relieving him of the task of repeatedly presenting basic factual information.

3. Evaluation of the Instructional System

The instructional system is conceived as a set of procedures designed to accomplish specified changes in the behavior of the learner; it follows from this that our evaluative activities are oriented to the system, rather than to the student. We observe the student's performance, but we evaluate the instructional system.

Students have been observed to be unmotivated (lazy), unprepared (ignorant), unqualified (stupid), pressured by other academic requirements (disorganized), diverted by social pressures (frivolous), and tormented by inner conflicts (mixed-up). These factors, admittedly, are not conducive to learning, but they are not reasons for not learning. Students, with all their failings, are among the "given" variables in the teaching-learning process, and the successful instructional system takes the student into consideration.

If the learners are observed to learn, we may conclude that either (a) everything is fine, or (b) one or more of the following problems exist:

A. The objectives are unrealistic (too easy);

B. The instruction is not needed (if "A" is true);

C. The testing instruments are invalid.

If we observe that our learners do not learn, we must conclude one or more of the following:

A. The objectives are unrealistic (too difficult);

B. The instruction is ineffective;

C. The testing instruments are invalid.

Simple observation of the performance of the learners, then, yields rather ambiguous results. The evaluation of the system should be accomplished with the most valid means available, and the system should be revised whenever the evaluation indicates that the system is not accomplishing its objectives.

It is at this point that the value of behaviorally stated objectives becomes clear. Since we are evaluating the system in terms of the performance of the learners, our evaluation depends on the validity and reliability of our observations. We cannot make valid and reliable observations of "appreciation" and "understanding," since these terms do not imply observable behavior: we are left with the necessity of assuming that the instructional system is effective.

Many of the goals of instruction seem to defy our efforts to define them in terms of changes in behavior, but the advantages of such definition encourage our sincere efforts to do so. Admittedly, there is much we do not know about instructional objectives, but we should be suspicious about the easy conclusion that objectives are "beyond" explicit statement, because this conclusion leads to assumptions about the effectiveness of instruction. In an era when we cannot afford the luxury of ineffective instruction, we must place highest priority on instruction which can be demonstrated to be effective.

Organization and Scope

The issues involved in systematic instructional design and development, and evaluation range over a broad area, and are so closely intertwined that any discussion of them is hampered by problems of organization. The approach selected for this paper is basically chronological: topics are discussed in the order in which they may be encountered in actual practice. The conclusions reached have been collected to form a summary section.

The topics selected are all related to faculty interests. References will be made to faculty rights and responsibilities, with a minimum of reference to institutional responsibilities and rights, respectively, which are their complement.

I. RESPONSIBILITY FOR BASIC DECISIONS

The basic responsibility for the manner in which courses are designed and for the conduct of instruction, lies with the individual faculty member, who is responsible for his activities to the head of his academic department or division, and to an academic committee on instruction. This line of responsibility is followed within the University of California (31), which is typical of other institutions of higher learning in this respect.

This same position has been taken, with regard to television (as a form of recorded instruction), by the American Association of University Professors, the National Education Association, and the University of California, respectively:

> The major responsibility of the teaching faculty in the formulation and decision of policies governing the use of educational television and in the planning and preparation of specific programs should be assured....(2).
>
> The television teacher is a professional educator - not a professional actor or performer. He should participate directly in the formulation and development of policy relating to his television assignment. He should be involved in the planning, production, utilization, and evaluation of the television program....(16).
>
> The decision to use television as the medium of transmitting an instructor's lectures and/or demonstrations to his students shall be that of the individual instructor and his department chairman. The content and the conduct of such courses, as of courses taught by traditional methods, is subject to the review and supervision of the Academic Senate Committee on Courses of Instruction(29).

Conclusion No. 1: The decision to engage in systematic design of instruction should be that of the individual instructor and his department chairman, acting under the supervision of the appropriate faculty committee.

II. BASES FOR DECISION-MAKING

Deciding to use these systematic design techniques involves many complex considerations, some of which are also involved in the relatively straightforward decision to use, or not to use, a particular medium of instruction, such as television. These considerations are listed briefly below, under the headings of Practical Necessity, Equity, and Incentive; additional discussion of each of these considerations is reserved to later sections of this paper.

Practical Necessity: As described earlier, the current and imminent demands on institutions of higher learning are such that instruction must be conducted in the most effective and efficient manner possible within available knowledge and technology, as a matter of practical necessity. The manner in which courses of instruction are designed and conducted should be subjected to cost-benefit analysis to assure that these standards are being met. The consideration is touched upon by University of California policy:

> ...It is axiomatic that the traditional methods of instructional presentation should be periodically evaluated in the light of new experiences, new research, and new educational media. The appropriateness of television to a particular course presentation must be judged on an individual basis, taking into account such objectives as: improvement in the quality of instructional presentation; more efficient use of faculty; more efficient use of instructional space, instructional facilities or materials(29).

The analysis of costs, then, should include the faculty member's time, the time of specialists who may be involved (see Appendix), the cost of travel that may be necessary for background study, the fees of consultants, the time of media production personnel, and the cost of supplies, equipment, and facilities. These costs should be estimated for the complete process, from initial planning and development, to materials production and evaluation, to periodic up-dating of the instructional system.

Benefits are more difficult to analyze, because they include factors not readily quantified. A fair comparison should be made, however, with the manner in which the course is being conducted (or would be conducted) using traditional techniques, and consideration should be given to increased efficiencies in the use of academic and nonacademic staff time and skills, and to the use of student time. Other considerations include savings in the use of facilities, equipment, and supplies. Some of the most important benefits are the most difficult to quantify: increased effectiveness in the instructional program and increased opportunities for faculty to explore new methods of instruction. These benefits should be given due weight in the analysis, in the most meaningful available manner. All considerations of benefit, too, should extend over the complete process, and through the useful life of the products of the process.

Equity: Given that an instructor has a professional responsibility to conduct his instruction in the most effective and efficient manner available to him, and that this may imply using a systems approach, some extension of effort is needed to assure that his rights and responsibilities are maintained. Also, the use of new instructional techniques may have some implications for the rights and responsibilities of the institution: these, too, should be assured.

Incentive: University faculty are, after all, human, and, as individuals, may be unwilling to accept the implications of these new techniques. The systems approach, by its nature, will question the manner in which the instructor has conducted his instruction in the past. A team of specialists will share with him the responsibility of developing his course of instruction. He will have to learn new skills, and spend a great deal of time in work which can be slow-moving and painstaking, time which would otherwise have been available for a research project, or some other attractive pursuit. Of course, the incentives may be identified as the pride that derives from a job well done, or as the satisfaction that his instruction will be more effective, or will cost less, but more practical considerations should be examined: the faculty member, in making his decision to use these techniques, must ask if his efforts will be acknowledged by those determining promotions and by his colleagues, if he will receive additional compensation for an extraordinary effort, if he will receive respect and cooperation from those working with him in implementing these new techniques, and if his basic rights and responsibilities are assured. These considerations will be discussed further in later sections of his paper.

Conclusion No. 2: The decision to apply systematic design techniques to instruction should be based on a cost-benefit analysis, and on the existence of assurances that the rights and responsibilities of both the instructor and the institution will be maintained.

III. RELEASED TIME CONSIDERATIONS

Practical Necessity: Because systematic instructional design involves more detailed analysis of the content and conduct of a course of instruction than do traditional techniques, it requires more time. These techniques are not short-cuts, but sophisticated tools for planning. Similarly, the design and development of recorded instructional materials is more time-consuming than preparation and delivery of a traditional lecture demonstration.

Established teaching loads are intended to provide ample time for "professional improvements and scholarly activity," as described in University of California Regulations (33), but the new media present unusual demands which are not accommodated by these load standards:

> ...the preliminary work leading up to the introduction of instructional television and programed learning in classroom teaching will require a substantial portion of our modest resources. Since these are already strained by current instructional needs, it is apparent that they are not in fact available and that a policy which in error assumes them to be can yield only discontent, anxiety, and pedagogical disaster(19).

The American Association of University Professors has observed that teaching loads are often unreasonably heavy, and has suggested several ways to avoid this problem. The following statement is of particular interest:

> Special adjustments may be appropriate for the faculty member instruducing a new course or substantially revising an older course. This is a matter of institutional self-interest as well as of equity; if the new course has been approved as likely to strengthen the institution's program, all appropriate measures should be taken to ensure its success(15).

The time demands of television production, as a form of recorded instruction, are widely recognized:

> In order to achieve high-quality (television) instruction, adequate time (in many cases full time) must be made available to the teacher(17).

> Adequate faculty time should be provided, and periodic studies made to ensure that the time allowed is consonant with competent teaching and reasonable

> total load. Drastic reduction of other duties will be necessary during the faculty member's preparation for offering a television course and during at least his first experience in teaching it(2).
>
> The preparation of televised lectures and demonstrations, particularly when courses are being re-structured for the first time for the change from conventional to televised methods of presentation, will require extra preparatory work on the part of the instructor(29).

Systematic design of instruction, then, is a time-consuming process which may lead to another time-consuming process, the design and development of recorded instructional materials. Given that some reduction in teaching load is required, the amount of that reduction should be determined on an individual project basis.

We lack the experience to determine the time required with confidence, but we know that the important variables include the level of the course, the size of the class, the experience of the instructor, the experience and availability of the support personnel, the availability of other resources, the amount of material to be developed or revised, and similar factors. When specialist personnel are available, they should be consulted for assistance in determining the requirements of the project.

There is some danger of underestimating the time required, due to the unfamiliarity of the task, the great variability in the demands of the task, and the understandable tendency to make comparisons with traditional precedures. This danger should be recognized, and efforts should be made to include some additional fraction of faculty time in the course of the calculations, as a "contingency."

Institutions of higher learning have an unfortunate reputation of reluctance to provide teaching load reduction for course development activities or for the development of recorded instructional materials. It would be unreasonable, in the absence of other information, to attribute this reluctance to allocate time to some vague animosities toward new techniques. It is more comforting, and probably more accurate, to conclude that justifications were incomplete.

Teaching load reduction should be included in the cost-benefit analysis, and thus be made part of the decision to use, or not to use, systematic planning techniques. This will avoid decisions such as "while the planning approach seems very desirable, too much faculty time is required." The allocation of faculty time should be based on the task requirements, and should not be influenced by fund limitations or surpluses.

Equities: The determination of the amount of time should include some measure of time over and above the "practical necessities," in the interests of insuring an equitable arrangement. While the faculty member has a responsibility to devote all of his working time to the service of the institution (31), and while he is encouraged to develop "new and effective techniques of instruction"(27:56), he retains the right to devote a reasonable amount of his time to "professional improvements and scholarly activity" (33), and to other activities related to his appointment. A faculty member's interest in these new techniques should not be frustrated by the requirement to accept an unreasonable total load.

Incentive: Teaching load reduction, per se, will probably not be regarded as an incentive to the faculty member, since his commitment to, and interest in, teaching is usually both profound and sincere. However, the instructor who is interested in systematic instructional planning, and in the potential of recorded instruction, will be encouraged to engage in these unfamiliar activities if the probability of his success is increased through the provision of ample time for the task. "Ample" time may well exceed the practical minimum and the equitable optimum.

Conclusion No. 3: There should be no question but that some reduction of teaching load is required for systematic design of instruction. The amount of reduction should be determined on an individual case basis, with the assistance of the available specialist personnel. In any case, the load reduction should be sufficient to meet the requirements of the task, to ensure the availability of faculty time for other activities recognized as part of his service to the institution, and to ensure a good probability of successful completion of the project.

IV. COMPENSATION CONSIDERATIONS

Practical Necessity: The requirements of these tasks demand that faculty time be available. If the reasons for entering into these activities are insufficient to justify providing reductions in teaching load, the task should not be attempted. If load reductions are justified, but impossible for administrative reasons, the task should not be attempted. Other forms of compensation, including money, should not be regarded as a substitute for time, when time is not available. Any substitutions for time will inevitably lead to compromises in the quality of the project, or of other duties.

Equity: Given that these activities are made part of the recognized instructional duties of the instructor, the compensation established by the terms of appointment should be regarded as equitable. The University of California regulations specifically prohibit additional compensation:

> No member of the faculty on full-time appointment shall receive additional compensation from University sources for services directly related to his recognized University duties during the academic year....(33).

When such activities are supported in part by grant funds, the rate of compensation should be at the instructor's regular rate of pay, even when the funding agency is willing to pay a higher rate:

> ...it would be a very unsatisfactory policy for the University, in dealing with its regular staff, to set up for some individual two rates of pay for different parts of the year, or to compensate for some projects it undertakes at a higher proportional rate than for others(33).

An instructor who has become skilled in these techniques through experience may be asked to assist another faculty member in his early efforts in this area, even when the course being developed is not part of the skilled instructor's recognized duties. University of California regulations permit compensation for such activities, "...only if relief from regular duties is not feasible and upon approval of the President or his recognized representative"(33). The availability of such an arrangement does not recommend it, necessarily: additional compensation in this instance should be considered only when the skilled instructor's involvement in the project is so minimal that such compensation is a rational substitute for the free time which is preferred.

The only instance in which additional compensation is appropriate occurs when such a project, or some portion thereof, is undertaken during periods of academic recess. In such cases, it is equitable and reasonable to provide additional compensation, at the regular rate of pay, rather than to expect the instructor to donate his time (see 33). Naturally, the individual instructor may contribute his time in order that the project may be undertaken when additional compensation is not available, but at no time should such a contribution be expected.

The additional effort of these activities can and should be rewarded in the course of evaluating an instructor's qualification for promotion. Effective teaching and "development of new and effective techniques of instruction" are recognized by University of California as a consideration for promotion (27:56). The preparation of recorded instructional materials receives similar recognition from others as well, including Michigan State University:

> The preparation and presentation of the materials heretofore described shall merit consideration as a professional contribution when assessing the individual's qualifications for tenure, promotion, and increase in salary (16).

Incentive: Provisions for the payment of additional money over and above provisions for appropriate teaching load reduction, should be regarded as undesirable even when possible. Such payments can only be regarded as inconsistent with general practices of compensation for recognized duties, and may even be regarded as insulting to the instructor.

More appropriate forms of incentive include recognition of the effort and achievements of the instructor by his colleagues within the academic and professional communities, with a recognition by fellow faculty members on appointment and promotion committees, of course, being of particular interest. Consideration of exemplary teaching practices is normally expected of such review committees, but additional incentives to engage in these demanding activities can be provided by the degree to which colleagues recognize and respect the instructor's efforts in these activities. Recognition and respect cannot be legislated, to be sure, but it can be encouraged, and its importance, in this case, emphasized through policy statements.

Another possibility is the awarding of prizes for exemplary achievement in the conduct of instruction. Such a prize could take many forms, ranging from a formal document, to additional released time (without assignment), to some amount of money. The most important aspect of such a prize, regardless of its form, would probably be the public and formal nature of the recognition thus provided to the instructor by his colleagues. Precedent for such prizes can be found on many campuses across the country. The award of prizes or other honors should be based on the demonstrated success of the instructional system in meeting its objectives.

Conclusion No. 4: Direct monetary compensation for exemplary efforts in the conduct of assigned instruction should not be permitted, except when such activities are carried on during periods of academic recess, and then only by prior arrangement. Exemplary efforts, however, should receive recognition by the academic community, particularly by committees reviewing the instructor's qualifications for promotion. Formalization of such recognition, through the award of prizes or other honors, should be encouraged.

V. RESPONSIBILITY FOR QUALITY OF INSTRUCTION

This topic arises because of the anticipated involvement of a team of specialists in course development. When a faculty member works with, for example, a behavioral psychologist, a tests and measurement scientist, a systems analyst, a computer programmer, and instructional programmer, instructional media specialists, other faculty members, or even consulting specialists, rather than by himself in the development of a course, some question may arise regarding the final authority in some aspects of the project.

In any instructional design project, final responsibility for the finished product(s) must reside with the faculty member to whom the course of instruction is assigned. This responsibility is well established with respect to television, as are the responsibilities of the instructor to his department and to the supervising faculty committee:

> The offering of particular courses of instruction, as well as the content, methods and techniques of the presentation of that instruction are the domain of the individual instructor and his academic departmental organization, subject to the supervision and review of the Academic Senate and its Committee on Courses of Instruction (29).
>
> ...Though the professor in a televised program should be willing to learn from the television experts, he should, as the educational authority, have final responsibility for the content and objectives of the program (2).
>
> Although the teacher should work cooperatively with technical and other appropriate experts, he should have the responsibility as the educational authority, for final approval of content and structure of the program (17).
>
> The assigned faculty member should be directly involved in the planning, production and evaluation of the instructional materials, and should be responsible for their content and format (16).

The fact that final responsibility for his instruction is reserved to the faculty member should not be regarded as a denial of the special knowledge of other experts. In an instructional design project, the instructor should function primarily as a subject-matter expert, and should encourage free expression of other expert opinion, to permit the achievement of the highest levels of instructional quality.

Conclusion No. 5: When working with a team of specialists in an instructional design project, the faculty member must retain final responsibility for his instruction. The faculty member should be encouraged, however, to respect the expertise of other members of the team.

VI. INHERENT DANGERS OF RECORDED INSTRUCTIONAL MATERIALS

Systematic instructional design has no inherent dangers, given prior arrangements which assure the rights and responsibilities of the faculty and of others associated with such an activity. It is hoped that the issues discussed in this writing cover these considerations adequately.

There is widespread concern, however, that the use of recorded instruction may grow unrestrained, and lead to situations in which students receive all of their instruction, if only for one course, through recordings. The concern is that the student's learning will be limited by reduced opportunities for active responding, and that the learning process will be dehumanized by the unavailability of desirable interactive learning processes. The concerns can be inferred from the following statement in the University of California Policy on Use of Recorded Television Lectures for Instruction:

> Active and responsible participation of the student is important in any method of instructional presentation, and it is of particular importance when the medium of television is employed. Opportunities beyond the televised lectures or demonstrations for student initiative and for personal contacts between students and instructors should be provided.... (29).

Systematic design, including an analysis of the student's tasks, is unlikely to lead to a single mode of instruction for an entire course; it is more likely that a "mix" of instructional modes will be indicated, ranging from large-group meetings to independent study, with each mode serving different phases of the learning process (see Appendix). Educators have recognized that no one mode of instruction is best for all phases of any one course, but practical conerns have often made it necessary to choose the most effective single mode. This unfortunate circumstance is not in the best interests of the student, whether the single mode is a face-to-face lecture or a televised lecture.

Several techniques are available for the stimulation of active student responses, both overt and covert, during televised instruction (8). Many of these techniques are also available to the large-group lecturer, but are used no more frequently there than in televised instruction. When systematic design indicates the appropriateness of recorded instruction, such as television recordings, every effort should be made to incorporate active student reponse stimulation.

There are many forms of recorded instruction, of course, including assigned reading (which rarely requires active response by the student), programed instruction (requiring optimal levels of active response) and computer-aided instruction (which requires optimal levels of active response, and which also permits a wide range of responses). Even an audio-taped lecture can be presented to students with a related workbook which requires written responses, thus encouraging involvement in the learning process, rather than permitting passive listening.

Spontaneous teacher-student interactions, usually regarded as vital to the learning process, are desirable, if only to avoid the vague threat of dehumanization of the process. Opportunities for this interaction should, of course, be provided, but efforts should be directed toward having these opportunities coincide with the points in the learning process that the student needs this interaction. An arbitrary schedule of discussion sections may serve no purpose beyond paying lip service to the desirability of this interaction, while the scheduling of interaction sessions on the basis of student needs can make significant contributions to the overall effectiveness of the instructional program.

Another danger inherent in recorded instructional materials is that their content may become obsolete so soon after their preparation that the efforts of the staff and the institution's investment are essentially wasted. This danger, admittedly, exists whenever ideas are committed to writing or any other permanent form, but it is particularly threatening when an investment of time and other resources is predicated on long-term usefulness of the materials. This investment cannot be protected by continued use of obsolete materials, obviously, so it becomes essential to apply common sense and every available instructional technique to increasing the probability of a reasonable duration of usefulness.

Finally, some concerns have been expressed to the effect that recorded instruction threatens the instructor, in that he will be replaced by, for example, a series of videotapes. The persistence of this concern suggests that there is at least some truth in it; indeed, we find that recorded instructional materials will eventually replace the instructor as a source of information, but will permit him to perform more of the essential instructional functions, including interacting with students on a one-to-one basis. We cannot expect such a change to come easily to individual instructors, but we can expect its desirability to become apparent to instructors as they gain experience with recorded instruction.

Conclusion No. 6: The primary justification for the use of recorded instruction should evolve from the nature of the student's tasks in the learning process, rather than from administrative or other conveniences. When recorded instruction is justified, opportunities for active responding by students should be incorporated.

Conclusion No. 7: Every effort should be extended in the preparation of recorded instructional materials to assure that the duration of their usefulness will be consistent with the total cost of their preparation. Implementation of available techniques for evaluating and improving such materials in the course of development should be strongly encouraged. The fact that our knowledge changes rapidly should receive due recognition: presentation of information which is expected to become obsolete rapidly should be either reserved for face-to-face meetings offered in conjunction with the recorded instruction, or included in the recorded instruction in a manner which permits convenient, economical up-dating. The anticipated duration of the usefulness of the materials, given appropriate up-dating, should be a prominent factor in the cost-benefit aspect of the justification for the preparation of the original materials.

VII. COPYRIGHT AND OTHER LEGAL CONSIDERATIONS

The intricacies of copyright law often trouble instructors interested in using published materials in their instruction; these intricacies are multiplied when this use includes incorporating such materials in recorded instruction. A complete interpretation of copyright law is, of course, beyond both the scope of this paper and the ability of the writer. The value of such an effort is further negated (as an example of "overkill") by the fact that the current law is being revised.

The present law permits educators some uses of copyrighted materials, when such uses are "not-for-profit" or within the provisions of the "fair use doctrine"(21:25). Unpublished, uncopyrighted materials may be protected by common law, rather than by the Federal statute: no use of such materials is permitted by common law without the author's permission(21:24).

The instructor has a legal and professional responsibility to avoid copyright infringements in the course of his instruction, since he has full responsibility for the content and conduct of his instruction. The instructor should know the laws which govern his activities: "Ignorance of the law is no excuse," as we all know. Staff instructional media specialists and, perhaps, librarians should be prepared to provide support to the instructor in meeting his responsibility, particularly in avoiding flagrant violations of common law and Federal copyright provisions. The television production office or instructional materials center should have a lay-language copyright law interpretation on hand, such as the booklet by F.S. Siebert (21), with at least one staff member conversant with its contents. Situations presenting difficult problems of interpretation should be referred to the institution's legal counsel.

The revision of the copyright law, presently under discussion in Washington, can be expected to involve substantial changes in the rights of educators, very possibly in the direction of tighter restrictions. A sizable education lobby has been active in the hearing being conducted by Congress, and has stressed the considerations which are involved in recorded instructional material. The position of "The Ad Hoc Committee on Copyright Law Revision" is presented by Wigren (35); the American Association of University Professors' (AAUP) position is discussed by Stedman (24) and the special considerations of educational computing are brought out in statements by EDUCOM (7), Kaplan and Miller (9), and Oettinger (18). The enactment of a revised law recommends the involvement of all educators during the hearing, and demands their attention after the law goes into effect.

Conclusion No. 8: Faculty retain the basic responsibility to avoid copyright infringements in the course of their instruction.

VIII. OWNERSHIP OF RECORDED INSTRUCTIONAL MATERIALS

A basic statement of ownership of instructional materials is made by Siebert, in the course of his interpretation of copyright law for educators:

> ...the original owner of an educational program is the author, creator, or inventor. This may be an individual, a group of individuals, or an institution. The products of an employee working within the terms of his employment normally belong to the employer or employing institution. In almost all cases of educational programs for the new media, the owner, either original or derivative, is an institution (21:10).

This statement of ownership would include all forms of recorded instruction, such as audio tapes, videotapes, films, self-instructional programs, and even chalkboard notations, which are produced by staff members. This ownership would also include written instructional system designs and specifications, such as a statement of course objectives and the most efficient and effective ways of meeting them, but it would not include the ideas contained therein, simply because ideas are not protected by copyright (21:7).

This ownership is a legal fact under present law. It could be difficult to interpret in certain circumstances (as when an employee produces a work partly on his time and partly on his employer's time), but if the circumstances are clear, the law is clear. The various questions relating to the moral and professional interests of faculty will be treated in later sections, as well the disposition of institutional ownership.

A somewhat different situation exists in the case of unrecorded instruction, as in the case of a lecture delivered directly to students, face-to-face. Some educators have claimed that such a lecture is protected by common law (see 25:87-88, and 26:385-389), and that recording of that lecture, as by a student who brings a tape recorder into the lecture hall, is legally prohibited without the permission of the instructor. We find, however, that only a written lecture or lecture outline is protected by copyright law; an essentially spontaneous lecture is not protected, no matter how well it may have been prepared, and the student is not prohibited by copyright law from making any use he may desire of his recording of the lecture. If the lecture has not been registered for copyright under the Federal statute, it is protected by common law, and no use is permitted without the owner's permission. If it has been registered for copyright, the law permits some not-for-profit use of the material, and a student may be permitted to make a recording in the interests of education. The student is prohibited, however, from selling copies of the recording for profit.

The lecturer may have other legal protection, probably under the laws protecting his right to privacy (a lecture might constitute a private communication). The lecturer's best protection from unintended uses of his lecture is the courtesy which is due to him from his students.

All of the foregoing discussion of legal ownership relates only to the works of employees of the educational institution. Lectures given by visiting scholars should be recorded only after mutually agreeable arrangements have been made regarding the recording, and the conditions for its subsequent use. Similarly, contracts with consultants (a test development specialist, for example) should include a clear statement of the ownership of the products of his work.

Conclusion No. 9: The legal ownership of the works of regular and temporary employees of an educational institution should be made clear within the terms of the employment contract, to avoid later misunderstandings.

(See also the discussion following, which is concerned with the management of recorded instructional materials.)

IX. MANAGEMENT OF RECORDED INSTRUCTIONAL MATERIALS

Basically, recorded instructional materials should be managed in a manner which protects all of the interests of both the institution and the author(s). The problem which presents itself, however, is in the specification of those interests and of procedures which serves both sets of interests in a mutually satisfactory manner.

No conflict seems to exist over the basic issues here involved: the interests of the institution and the interests of the faculty member/author tend to coincide rather closely, as they should. The conflicts which can arise in the use of recorded instructional materials will spring from individual interpretations of these interests, as applied to specific cases. A comprehensive, equitable policy will establish a guideline which can be expected to eliminate sincere but unpleasant differences of opinion between institution and author(s), and to minimize the reluctance of faculty to realize the potential of recorded instructional materials.

The interests which are involved include the following:

1. The advancement and spread of knowledge
    - A. optimal use of new methods of instruction
    - B. maintenance of highest available quality in the conduct of instruction
    - C. maximal dissemination of recorded instructional materials
2. Efficient use of resources
    - A. return of "full value" of investment made in producing recorded instructional materials
    - B. payment of fair compensation to author(s) for use of materials
3. Preservation of reputations
    - A. avoidance of commercializing activities related to the advancement and spread of knowledge
    - B. withdrawal of obsolete materials from use

The interests specific to the faculty member/author have received considerably more attention that have institutional interests in this area. This imbalance can be attributed to traditional arrangements designed to protect academic freedom and the incentives of the faculty. The current policy of the American Association of University Professors includes this statement, with respect to the management of recorded instructional materials:

> Faculty members directly involved in the production of audio-visual tapes and films should be given that control over their continued use necessary to protect students from obsolescent teaching and teachers from damaged reputations. Savings accruing from repeated showings in the same institution should be distributed with due regard for the rights of teachers in the tapes and films, as in printed materials prepared for their students, and for the institution's responsibility to encourage the growth of faculty members as scholars and teachers. A fitting means of encouragement would be the investment of such savings and profits in provisions for released time grants for study and publication and in improved library and otherresearch facilities (2).

The most significant omission in this statement is a provision protecting the institution's interest in receiving an appropriate return for its investment in the production of recorded instructional materials. The absence of any reference to staff specialists who may have an author's interest in such materials can be attributed to the nature of the organization which prepared the statement. This omission becomes significant in an era when artists, photographers, instructional programers, television and film directors, and others are closely involved in the preparation of instructional materials. There is no apparent basis on which their author rights to such materials can be construed to be less than the rights of the faculty member requesting their preparation, or participating in their preparation.

The conclusions presented below are intended to include due consideration of the interests of both the institution and its staff; while these interests are assumed to coincide, as described above, the conclusions may speak to the respective interests of one or the other, in the interests of clarity. (Note: The following are not true "conclusions," since they are not derived directly from the foregoing brief discussion. They are intended, however, to encompass all of the considerations which affect the equity of the management of recorded instructional materials, with the basic principle being that the institution retains the right to intramural use, while the author retains the right to extramural use.)

Conclusion No. 10: The legal ownership of the copyrightable works of academic staff members should be formally assigned to the author(s). The institution may, as a condition of providing institutional resources toward the development of such works, require the author to grant to the institution the right to retain one or more "good" copies of the work for unrestricted intramural use. This institutional use should include the right to make duplicates of the material, but should not include the right to publish, loan, exchange, lease, or sell the material for extramural use, or for extension activities of the institution. The granting of these rights, or of broader or more limited institutional rights, should be agreed upon prior to the institution's provision of support toward the development of the work, and should be a consideration in the cost-benefit aspect of the justification for the preparation of recorded instructional materials. The faculty member/author should retain the prerogative to delay institutional use of these materials until he considers them to be acceptable for such use.

Conclusion No. 11: The legal ownership of the copyrightable works of nonacademic staff members working on assignment (e.g. staff photographer, graphic artist, television director) should be retained by the employing institution. The institution should be free to use the work for any purpose which is in the interests of the institution, but should realize no net income directly from such uses. The institution should be permitted to grant one-time publication rights to extramural agencies. The author of the work should be granted the right to any personal use of the materials, including commercial exploitation, given due regard for the rights of others to the work, and given that such personal uses are made without cost to the institution. In the event that exclusive rights are desired by either the author or the institution, the granting of such rights should be accomplished by mutual agreement, and should involve no royalty payments. Unless exclusive rights are granted to the author, the original materials, or a duplicate of approximately equal quality, should remain the property of the institution in perpetuity. When exclusive rights are granted to the author, he should be sold the original materials at a cost not to exceed the value of the raw materials involved.

Conclusion No. 12: The author(s) should have the right to attribution or nonattribution of authorship of recorded instructional materials, both in their original form and in revised forms. Exercise of the right to nonattribution of authorship should have no bearing on the responsibility of the author(s) for the quality of the original materials, or of revisions accomplished by the author(s).

Conclusion No. 13: The institution's right to retain a copy of the copyrightable works of the staff should not imply an obligation to retain this copy for any minimum period of time. If the institution wishes to destroy its copy of a work, the author should be given the option of purchasing that copy at a cost not to exceed the value of the raw materials involved. This option should always be extended when the institution holds the only existing copies of the work. When the author purchases the only existing copies of his work, all rights to that work should be released to him. Once the author leaves the employ of the institution, the institution should be able to destroy its copies of that author's work at any time, without prior contact with the author.

Conclusion No. 14: The established responsibilities of the individual faculty member for the content and conduct of his instruction should be affirmed in the use of recorded instructional materials. Such materials, whether prepared by the instructor using them, or by others, should be used only when, in the judgement of the instructor, they are the best available means of meeting current instructional objectives. In no case should a faculty member be expected for economic reasons to utilize recorded instructional materials which he regards as unsuitable in any respect.

Conclusion No. 15: Recommendations for the revision or withdrawal of recorded instructional materials should be the responsibility of the instructor currently responsible for the course for which the materials were prepared. Such recommendations should be based on the instructional value of the materials, and should be made with the costs of revision or withdrawal in mind.

Conclusion No. 16: The decision to copyright should be the prerogative of the author. Should the author desire to copyright his work in the name of the institution, a request for such action should be submitted to the appropriate officer of the institution, and should be acted upon in the manner prescribed by the policies and regulations of the institution. Since the institution's interest in extramural use will be characterized by a dedication to the advancement and spread of knowledge, copyrighting works in the name of the institution should be considered only when it will contribute to the general availability of the materials at the lowest possible cost. Should the author wish to copyright his works in his own name, such action should be taken in a manner which will leave the institutional rights unaffected. The institution should relinquish its rights when the author can demonstrate that such action would be consistent with the interests of the institution.

Conclusion No. 17: Maximal distribution of recorded instructional material should be strongly encouraged. The decision to place such materials in distribution, and the selection of the method of distribution, should be the prerogative of the faculty member/author. In the event that the author requests one or more copies of the work for his personal use, including distribution, they should be provided at no cost to the institution. Should the author wish to cooperate with the institution in the distribution of his recorded instructional materials, a mutually acceptable formal agreement should be prepared between the author and the institutional agency which has been established to conduct publication and/or distribution activities. Generally, institutional involvement in distribution of such materials should be undertaken in the interests of the advancement and spread of knowledge, rather than recovery of production costs and/or the generation of income beyond the costs of the distribution activity. In the event that a net income is realized, however, the agreement should provide for payment of 50% of this net income to the author(s), and 50% to the institution.[1] In the disposition of any net income accruing to the institution, first consideration should be given to the promotion of research in instructional media.

Conclusion No. 18: No recordings of any type should be made of the voice or person of students, visitors to the campus, or others who are not regularly employed by the institution, without due regard for the applicable rights of authorship and privacy. Generally, this recommends a written statement signed by the individual being recorded or, in the case of minors, by the individual's guardian, which statement should identify the occasion of the recording, give consent for the making of a recording, and release all rights to the recording to the institution. A statement of this type should be acquired prior to recording whenever possible, and should be a prerequisite to any uses of the recording. All subsequent uses of the recording should be governed by the terms of the agreement.

Conclusion No. 19: It is anticipated that systematic instructional planning and the preparation of recorded instructional materials may lead to long-range efficiencies in the use of faculty time and to reductions in the expenditure of institutional resources. In the disposition of such benefits, the institution should give first consideration to improvements in the instructional program.

Conclusion No. 20: The use, distribution, or copyright of the works of institutional staff, as described above, should be subject to overriding contractural obligations which may exist.

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[1] The "50-50" arrangement incorporated here should be regarded only as a point of departure: for a valuable discussion of royalty bases and rate structures, see Baumol and Heim (4).

X. SUMMARY

A systems approach to instructional design appears to be the best available means of incorporating optimal levels of efficiency and effectiveness in the instructional program. The pressures currently acting on institutions of higher learning are such that faculty and administrators should explore the implications of a systems approach as a potentially valuable tool for instructional planning.

Systematic instructional design and the resultant increase in the use of recorded instructional materials will place new demands on those involved in the teaching-learning process. With these new demands will come new patterns of activity and a multitude of questions involving the basic interests of the faculty member and the institutions, suggesting that these interests be re-examined and that steps be taken to assure their protection.

In the preceding paper these interests have been examined in the order they would be encountered in an instructional system design project. The conclusions reached are summarized below under six major headings, starting with "Planning the Project" to "Copyrighting the Instructional System." These conclusions, when considered collectively, provide one possible approach to the protection of these interests in a manner designed to facilitate and encourage full realization of the potentials of systematic instructional design.

Planning the Project

1. The decision to engage in the design of an instructional system should be that of the individual instructor and his department chairman, acting under the supervision of the appropriate faculty committee.

2. This decision should be based on a cost-benefit analysis covering the full period during which the instructional system (including recorded materials) will remain useful and available.

3. This decision should be accompanied by sufficient assurances that the pertinent rights of the instructor and the institution will be maintained and that the quality of instruction will not be compromised.

Conducting the Project

1. There should be no question but that some reduction of teaching load is required for the design of an instructional system. The amount of reduction should be determined on an individual case

basis, with the assistance of the available specialist personnel. In any case, the load reduction should be sufficient to meet the requirements of the task, to ensure the availability of faculty time for other activities recognized as part of his service to the institution, and to ensure a good probability of successful completion of the project.

2. Direct monetary compensation for the design of assigned instruction should not be permitted, except when such activities are carried on during periods of academic recess, and then only by prior arrangement.

3. While the instructor is encouraged to respect the expertise of specialists working with him on an instructional design project, he must retain final responsibility for the content and conduct of his instruction. This responsibility should be accompanied by the authority to accept or reject any aspect of the project's products, including the finished instructional design and materials. The instructor's exercise of his right to non-attribution of authorship should have no bearing on this responsibility.

4. Implementation of the available techniques for evaluating and improving recorded instructional materials in the course of their development should be strongly encouraged.

5. The fact that our knowledge changes rapidly should receive due recognition: presentation of information which is expected to become obsolete rapidly should be either reserved for face-to-face meetings offered in conjunction with recorded instruction, or included in recorded instruction in a manner which permits convenient, economical up-dating.

6. The instructor should have the basic responsibility to avoid illegal representations of the voice, person, or works of others in the course of his instruction. No recordings of any type should be made without due regard for the applicable rights of authorship and privacy. Generally, this recommends a written statement signed by the individual being recorded, or, in the case of minors, by the individual's guardian, which statement should identify the occasion of the recording, give consent for the making of a recording, and release all rights to the recording. A statement of this type should be acquired prior to recording whenever possible, and is a prerequisite to any uses of the recording.

Recognizing Authorship

1. The author(s) should have the right to attribution or non-attribution of authorship of instructional systems or recorded instructional materials, both in their original form and in revised forms.

2. The legal ownership of the works of regular and temporary employees of the institution should be made clear within the terms of the employment contract.

   A. The legal ownership of the copyrightable works of academic staff members should be formally assigned to the author(s), in a manner which grants the institution unrestricted intramural use of those works.

   B. The legal ownership of the copyrightable works of non-academic staff members working on assignment (e.g., staff photographer, graphic artist, television director) should be retained by the employing institution, in a manner which grants the author unrestricted personal use of those works.

   C. The legal ownership of copyrightable works of the institution's staff should remain subject to overriding contractual obligations which may exist.

3. Exemplary efforts in the designs of instruction, or in the development of recorded instructional materials, should receive recognition by the academic community, particularly by those reviewing the individual's qualifications for promotion. Formalization of such recognition, through the award of prizes or other honors, should be encouraged.

Institutional Uses of the Instructional System

1. In the course of assigning legal ownership of copyrightable instructional materials to the academic author, the institution should claim the right to retain one or more "good" copies of the materials for unrestricted intramural use, to assure that the institution realizes benefit proportionate to its support.

   A. This intramural use should include the right to make duplicates of the materials, but should not include the right to publish, loan, exchange, lease, or sell the material for extramural use, or for extension activities of the institution.

B. The institution's right to retain a copy (or several copies) of these materials should not imply an obligation to retain this copy for any minimum period of time. If the institution wishes to destroy its copy, the author should be given the option of purchasing that copy at a cost not to exceed the value of the raw materials involved. When the author purchases the only existing copies of the work, all rights to that work should be released to him. Once the author leaves the employ of the institution, the institution should be able to destroy its copies of that author's work at any time, without prior contact with the author.

2. By claiming legal ownership of copyrightable works of non-academic staff, the institution should be free to use the works for any purpose which is in the interests of the institution.

   A. The institution's use should include publication and granting one-time publication rights to extramural agencies, but should not include the realization of direct profit.

   B. In the event that exclusive rights to the work are desired by either the author or the institution, the granting of such rights should be accomplished by mutual agreement, and should involve no royalty payments. Unless exclusive rights are granted to the author, the original materials, or a duplicate of approximately equal quality, should remain the property of the institution. When exclusive rights are granted to the author, he should be sold the original materials at a cost not to exceed the value of the raw materials involved.

3. The established responsibilities of the individual instructor for the content and conduct of his instruction should be affirmed in the use of recorded instructional materials. Such materials, whether prepared by the instructor considering their use, or by others, should be used only when, in the judgment of the instructor, they are the best available means of meeting current instructional objectives. In no case should an instructor be expected, for economic reasons, to utilize recorded instructional materials which he regards as unsuitable in any respect.

4. Recommendations for the revision or withdrawal of recorded instructional materials should be the responsibility of the instructor currently responsible for the course for which the materials were

prepared. Such recommendations should be based on the instructional value of the materials, and should be made with the costs of revision or withdrawal in mind.

5. It is anticipated that the design of instructional systems and the preparation of recorded instructional materials may lead to long-range efficiencies in the use of faculty time and to reductions in the expenditure of institutional resources. In the disposition of such benefits, the institution should give first consideration to improvements in the instructional program.

Publishing the Instructional System

1. Staff authors have the prerogative to publish their works, and to select the method of publication. Should the staff author request one or more copies of his work for his personal use, including distribution, they should be provided at no cost to the institution. The institution, acting in its own interests, may elect to loan or to release the original version of the work to the author, rather than to provide copies; in such a case, the original work should be provided at a cost not to exceed the value of the raw materials.

2. Should the author wish to cooperate with the institution in the publication of his work, a mutually acceptable formal agreement should be prepared between the author and the agency which represents the institution for publication and/or distribution activities. Generally, institutional involvement in the distribution of instructional materials should be undertaken in the interests of the advancement and spread of knowledge, rather than recovery of production costs and/or the generation of income beyond the costs of the publication activity. In the event that a net profit is realized, however, the agreement should provide for payment of 50% of this profit to the author(s), and 50% to the institution. In the disposition of net profits accruing to the institution, first consideration should be given to the promotion of research in instructional media.

Copyrighting the Instructional System

1. The decision to copyright instructional systems, including recorded instructional materials, should be the prerogative of the legal owner (who may be either an academic staff member, the institution, or a nonacademic staff member who has been granted ownership of his work by the institution).

A. Should the author wish to copyright his work in his own name, such action should be taken in a manner which leaves the institutional rights to that work unaffected. In such a case, the institution should relinquish its rights when the author can demonstrate that such action would be consistent with the interests of the institution.

B. Should the author wish to copyright his work in the name of the institution, a request for such action should be submitted to the appropriate officer of the institution, and should be acted upon in the manner prescribed by the policies and regulations of the institution. Since the institution's interests in extramural use will be characterized by a dedication to the advancement and spread of knowledge, copyrighting works in the name of the institution should be considered only when it will contribute to the general availability of the materials at the lowest possible cost.

APPENDIX: TWO CASE STUDIES OF SYSTEMATIC INSTRUCTIONAL DESIGN

Case Study One: an Industrial Training Course

Course: First Aid and Personal Safety
Project Director: David G. Markle (13)

This course was developed by the American Institutes for Research, Palo Alto, California, for the American Telephone and Telegraph Co. The project objective was "...to develop a basic first aid course which would, in seven and one-half hours, produce results at least equivalent to those produced by standard first aid instruction taking ten hours...." (13:1).

Development of Specific Course Objectives: The American National Red Cross First Aid Manual was used as a reference for the analysis of the subject matter of basic first aid. A list of 500 potential test questions was developed on the basis of this analysis; these questions were organized in terms of decision levels, and sample groups from the learner population were asked to answer the questions. These initial test results were used to eliminate "common knowledge" items, and to eliminate ambiguities and inefficiencies in the remaining items. The final list was then re-stated as specific instructional objectives.

Task Analysis: The analysis of the learning task led to a combination of motion picture films (to demonstrate procedural skills), workbook test-and-question sequences, and practice sessions.

Development of Instructional Materials: The refined set of criterion questions described above was re-organized to form a rough draft of the instructional program: no supporting material was added. The results of the testing of this rough draft were used as the basis for the addition of supporting information. Three versions of the programed course were then developed and tested to determine needs for additional material, and to locate ambiguities and inefficiencies which detracted from learning.

Results: The third version of the course met the project objective. The progress to this point is suggested by the following data:

Program	Time Req'd.	Avg. Score
Standard First Aid Course	10.0 hrs.	132
Version No. 1, Programed Course	12.0 hrs.	267
Version No. 2, Programed Course	9.0 hrs.	268
Version No. 3, Programed Course	7.5 hrs.	278

Case Study Two: a University English Course

Course: Rhetoric 101 and 102
Project Director: Andrew Schiller, Professor of English (20)

This course was developed by a committee of English faculty, with the support of the Office of Instructional Resources, at the University of Illinois. The project objective was to improve instruction in Rhetoric in the face of spiraling enrollments and increasing scarcities of faculty time.

Task Analysis: It was determined that the teaching of Rhetoric involves lectures, discussions of lecture material, assigned reading, assigned writing, faculty critique of writing, and remedial exercises for writing mechanics.

Design of Instructional System: The committee visited other schools and met with consultants to determine the best way to conduct the course. Their attention was directed to the potentials of self-instructional laboratories. The course was then designed to include videotaped large-group lectures, tutorial sessions, assigned reading and writing, self-instructional units in support of the lectures, and assigned self-instructional remedial exercises.

Results: The committee has retained a consultant to conduct a program of evaluation of the revised course; this evaluation is in progress. The committee feels, however, that an important objective relative to improving instruction is already clearly evident: the self-instructional laboratory concept has added significantly to the individualization of students' instruction, and has provided a valuable flexibility in the awarding of proficiency credit in Rhetoric (credit can be awarded conditionally, given the satisfactory completion of specified self-instructional units).

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OCCASIONAL PAPER NO. 2

SUPPLEMENT

INSTRUCTIONAL DESIGN, RECORDED INSTRUCTION AND FACULTY INTERESTS WITHIN THE UNIVERSITY OF CALIFORNIA.

INTRODUCTION

The problems of institutions of higher learning in general are, of course, also present within the University of California. With respect to student load, for example, recent projections by the U.S. Office of Education, for the period from 1965-66 to 1974-75, indicate average annual increases of 12.7% in college students, 12.6% in full-time faculty, and 14.9% in doctoral degree recipients (22:35,16,65). University of California projections for the same period show average increases of 16.1% in students and 19.3% in full-time faculty: these percentages represent a total of 140,000 students and 10,690 full-time faculty members in 1974-75 (1:1).

The task of locating new faculty members is also expected to be a serious problem: assuming that 6% of college faculty withdraw from teaching each year, and that only 48.4% of doctoral degree recipients enter college teaching (11:10,58), the University of California, enrolling 5.4% of the nation's college and university students in 1974-75 (22:35) must attract approximately 8.5% of all new college teachers to its teaching staff during the next ten years. This percentage can be considerably greater, particularly in the physical sciences, as industry absorbs a greater and greater share of the graduates receiving doctoral degrees.

These circumstances suggest that the University of California should have a strong interest in fostering the design of instructional systems, and that its policies and regulations should be supportive of efforts in this area (which includes the development and use of recorded instructional materials). The present situation, however, is that efforts in these areas are too often accompanied by uncertainties over the balance of faculty and institutional interests. This general observation is based on the writer's experiences over the last seven years on two campuses of the University, on several conversations with academic and non-academic staff members, and on a recent telephone survey of the television production offices of the nine campuses of the University (Appendix A).

These observed difficulties may well be based on an absence of appropriate policies, on divergent interpretation of existing policies, or on a general unfamiliarity with existing policies.

The policies of any organization require periodic review to assure their efficacy under current circumstances. Such a policy review is particularly important for institutions of higher learning in an era when new approaches to the teaching-learning process are appearing: policies which affect the instructional program directly should support the faculty's efforts to exploit new techniques which are found to be valuable, and should maintain the respective interests of the faculty and the institution in the face of new patterns of instruction.

The conclusions of the preceding discussion have been proposed as a basis for policies to maintain faculty and institutional interests during the design, development, and use of instructional systems, including recorded instructional materials. These conclusions provide a context for the following review of the pertinent policies and regulations of the University of California.

I. PLANNING THE PROJECT

1. The decision to engage in the design of an instructional system should be that of the individual instructor and his department chairman, acting under the supervision of the appropriate faculty committee.

There appears to be no confusion regarding the instructor's authority with respect to his instruction, including the authority to engage in systematic instructional design. The decision to use television, specifically, is reserved to the instructor and to his department chairman, subject to the approval of the Academic Senate Committee on Courses of Instruction (29). These same concurrences are required in all decisions relative to the content and conduct of instruction (31), although common practice leaves most of these decisions to the instructor. We may assume that the principles which are the basis of the "Policy on Use of Recorded Television Lectures for Instruction" would also apply to other forms of recorded instruction, but a more satisfactory policy would be sufficiently broad as to consider decisions relative to all forms.

2. This decision should be based on a cost-benefit analysis of the full period during which the instructional design (including recorded materials) will remain useful and available.

We must refer to the "television policy," with its limited coverage, for the University's position on this issue. This policy lists these criteria for the use of television in a given course: ". . . improvement in the quality of instructional presentation; more efficient use of faculty; more efficient use of instructional space, instructional facilities or materials" (29).

The policy statement implies that other considerations are also important, including, presumably, more efficient use of the student's time and of the staff's time. These important considerations, taken as a whole, imply a benefit analysis. The statement, however, omits any direct reference to the costs of using television in instruction. A rational decision to use television in instruction cannot be made in the absence of some consideration of the costs which will be incurred, as well as the benefits which will be realized. It would be desirable to have a policy which requires cost-benefit analysis, to protect both the short-term interests of the institution, and the long-term interests of the faculty.

The difficulties of cost-benefit analysis have been touched upon in the earlier discussion; such an analysis is presently beyond the reach of the individual considering the use of recorded instructional materials. The University should take action to develop a model for such analysis of instructional systems, in order that faculty planning for the use of recorded instruction may be facilitated, and in order that the institution may be protected from benefits which are achieved without respect to their cost.

3. This decision should be accompanied by evidence showing that the pertinent rights of the instructor and the institution will be maintained, and that the quality of instruction will not be compromised.

The maintenance of the various faculty and institutional rights will be discussed in detail below, under various headings. The "evidence" referred to above should take the form of established policies or, when more appropriate, written agreements covering interests specific to the individual project.

The University "television policy," already cited, stresses the importance of active student participation, of student initiative, and of direct faculty-student contacts (29). As discussed earlier, our concern for these matters need be no greater in recorded instruction than in "conventional" instruction: the student who passively watches a televised lecture is no worse off than the student who passively watches a "live" lecture. Active participation is to be encouraged in all cases.

The real danger of recorded instruction derives from misuses of the media, rather than from any essential characteristics of the media. We should direct our concern to the hastily prepared lecture, to the unjustified use of expensive media, and to like errors, rather than to any pedagogical shortcomings, presumed to be inherent in a given medium of instruction. The best television research evidence leads us to believe that good instruction remains good when it is mediated by television, and that poor instruction remains poor.

II. CONDUCTING THE PROJECT

1. There should be no question but that some reduction of teaching load is required for the design of instructional systems. The amount of reduction should be determined on an individual case basis, with the assistance of the available specialist personnel. In any case, the load reduction should be sufficient to meet the requirements of the task, to ensure the availability of faculty time for other activities recognized as part of his service to the institution, and to ensure a high probability of successful completion of the project.

The "television policy" also includes a statement to the effect that the preparation of television materials will require ". . . adjustment in the instructor's assignment . . ." to be determined on an individual basis by the academic department chairman (29). This would seem adequate (if it leads to an appropriate amount of released time), but difficulties have been experienced in practice. The writer's survey of the University's television offices (Appendix A) revealed that, on the campuses where television activities have involved a need for released time, that time has been provided only rarely, if at all. This general unavailability of released time has hampered the development of recorded instructional materials, sometimes to the extent of forcing the cancellation of planned materials development projects. We may expect that similar problems will occur in the future on those campuses which are still developing television production capabilities.

The reasons for the general unavailability of released time were not specifically identified in the course of the survey, but these are some reasons which may exist:

A. Faculty members considering television uses are either unaware of the policy provisions for released time, or they are unwilling to request released time;

B. Department chairmen may be reluctant to grant released time because of reservations about the usefulness of television;

C. Department chairmen may be unable to grant released time because it would involve either cancelling scheduled courses or employing a substitute instructor.

The first alternative is usually undesirable, and the second is probably impossible for practical reasons, including shortages of funds;

D. Department chairmen may be dissatisfied with the cost-benefit justification (if any) offered in support of the proposed project.

In the case of the first reason, media staff should not hesitate to discuss released time needs with interested faculty, and to encourage them to seek released time, as provided by the existing policy.

If the department chairman has reservations about the pedagogical value of televised instruction, media staff should acquaint him with the results of research designed to demonstrate that good instruction is not adversely affected by mediation through television. The instructor, too, should be prepared to demonstrate that the planned use of television recordings (or other forms of recorded instruction) includes appropriate arrangements for active student participation and for personal contacts with the instructor.

The existence of practical staffing problems suggests that planning for instructional design activities be made far enough in advance to permit needed adjustments in the instructor's schedule. These adjustments should not involve a moratorium on the instructor's non-instructional duties, including "professional improvements and scholarly activity . . ." (33). The difficulty of locating a substitute instructor to conduct instruction which cannot be rescheduled may be avoided by scheduling the instructional design work during periods of academic recess, during which the instructor may be paid for the time spent on such a project (33).

Funds to support instructional design activities are available through a number of sources, including the Regents of the University of California (see Appendix E). Grant funds from non-University sources may be available, depending on the nature of the project: generally, projects can be funded most easily when large numbers of students will benefit, and when the results of the study have broad implications for higher education. If a project is genuinely important, and if planning for the project is undertaken early enough, funds can be located to support the faculty member's time, and to provide other needed resources.

The importance of cost-benefit justification, and the difficulty of developing such an analysis, has already been discussed. While we may be unable to capture and quantify all costs and all benefits without a suitable model, we can provide meaningful discussion of these considerations in support of a request for released time. The effort to provide a cost-benefit justification at this level should yield benefits in the planning of the project as well as in securing appropriate amounts of released time.

The above discussion of released time has been oriented to instructional television recordings, primarily because of the orientation of the "television policy"; the needs for released time, however, are basically no different in projects involving the design of instructional systems or the development of recorded instructional materials with media other than television.

2. Direct monetary compensation for the design of assigned instruction should not be permitted, except when such activities are carried on during periods of academic recess, and then only by prior arrangement.

The University of California has clear policies in this regard, and they are consistent with the arrangement implied above (33). The availability of funds to support instructional design activities during periods of academic recess has already been discussed.

3. While the instructor is encouraged to respect the expertise of specialists working with him on an instructional design project, he must retain final responsibility for the content and conduct of his instruction. This responsibility should be accompanied by the authority to accept or reject any aspect of the project's products, including the finished instructional design and materials. The instructor's exercise of his right to nonattribution of authorship should have no bearing on this responsibility.

The University's policies include a clear statement of the faculty member's responsibility to his academic department and to the Academic Senate for the content and conduct of his instruction (29). The development of constructive relationships between instructors and other specialists is not known to be a general problem. In any case, such relationships will be dependent upon various factors, including the competence of the various specialists, their ability to cooperate on a specific task, and the degree of autonomy considered essential by the individual instructor.

The right of final acceptance or rejection is reserved to the instructor as a logical extension of his general responsibility, and the instructor's authority in such actions should be unquestioned. Naturally, the economic implications of rejecting the products of an instructional design project should be given due consideration by the instructor, but economic expedience should never take precedence over instructional quality in such cases.

4. Implementation of the available techniques for evaluating and improving recorded instructional materials in the course of their development should be strongly encouraged.

A systematic approach to the development of instructional materials must involve evaluation of the materials in terms of their success in meeting predetermined objectives. The cybernetic process of evaluating and revising materials in the course of their development, in order to improve their effectiveness, is probably the most efficient approach to the preparation of recorded instructional materials of demonstrable quality. The research in instructional media suggests that subjective evaluations and the application of teaching experience are unsatisfactory substitutes for objective evidence of instructional effectiveness. This evidence can, and should, be derived from field trials of the materials while they are still in development, to permit revisions to be made while they can be accomplished economically.

No policy of the University refers to this process directly. The interest of the University in effective instruction, however, is well-established in several official statements (see, for example, 27:56), and is considered to encompass processes such as the developmental revision of instructional materials.

5. The fact that our knowledge changes rapidly should receive due recognition: presentation of information which is expected to become obsolete rapidly should be either reserved for face-to-face meetings offered in conjunction with recorded instruction, or included in recorded instruction in a manner which permits convenient, economical up-dating.

Current University policy assigns the instructor control over recordings of his lectures or visual demonstrations to avoid the dangers of obsolescent teaching and damage to reputations (29). This policy will be considered below, with respect to the management of recorded instructional materials. We should, however, consider the effect of this policy on the preparation of such materials. Approaching the real problem of obsolescence by permitting the destruction of out-dated materials constitutes tacit approval of the development of short-lived materials. We cannot expect recorded materials to yield benefits consistent with the cost of their preparation unless those materials have been prepared with a fairly long period of usefulness in mind.

A policy which encourages the design of materials with a long useful life is clearly preferable to the present policy, and would be consistent with current practices with respect to the publications of faculty members. Because written materials, once published, are not subject to withdrawal, authors are inclined to bring considerable care and thoughtfulness to their writing. This same care and thoughtfulness is not misplaced in the case of recorded instructional materials.

6. The instructor should have the basic responsibility to avoid illegal representations of the voice, person, or works of others in the course of his instruction. No recordings of any type should be made without due regard for the applicable rights of authorship and privacy. Generally, this recommends a written statement signed by the individual being recorded, or, in the case of minors, by the individual's guardian, which statement should identify the occasion of the recording, give consent for the making of a recording, and release all rights to the recording. A statement of this type should be acquired prior to recording whenever possible, and is a prerequisite to any uses of the recording.

This issue appears to be adequately covered in the general assignment of responsibility to the instructor for the content and conduct of his instruction (29), although a clear statement regarding this responsibility would serve to emphasize its importance. Copyright infringement is mentioned briefly in the regulation "Production and Copyrighting of Teaching Aids" (32).

A sampling of release forms which are in current use within the University has been provided as Appendix C.

III. RECOGNIZING AUTHORSHIP

1. The author(s) should have the right to attribution or nonattribution of authorship of instructional systems or recorded instructional materials, both in their original form and in revised forms.

The established policies of the University of California include no reference to attribution or nonattribution of authorship. Extending academic and nonacademic staff authors the right to attribution of authorship of instructional materials produced with University resources would provide appropriate recognition and valuable incentive.

The right to attribution of authorship should be controlled, however, to avoid having endless "credit lines" precede every presentation of instructional materials. Since the practices of the commercial film and television industries are characterized by excessive concern for the identification of creative contributors to the program, it is clear that these practices will provide few useful guidelines for University practices. It would be appropriate to develop simple University guidelines for the attribution of authorship to instructional materials.

The right to nonattribution of authorship may be equally important, since instructional materials may be revised for various reasons, and by various authors, during their useful life. A staff author may wish to claim authorship of the instructional materials produced, and to require that his name be removed from the materials whenever they are revised by someone other than himself. Naturally, the instructor's responsibility for his instruction is not relieved by nonattribution of authorship of instructional materials, whether he authors them in their original form or in revised forms.

It is appropriate that significant instructional materials produced with the resources of the University carry credit line information which identifies the University and describes briefly its role in the production of the material. The University, too, should enjoy the right of nonattribution of its authorship (or other involvement) in such materials.

The University Relations Manual includes a draft policy statement (see Appendix F) to the effect that no printed credit is usually given to an artist or photographer who receives a normal fee to provide photographs, layouts, or artwork for University publications. Since this draft policy apparently applies neither to materials prepared to meet local instructional requirements, nor to staff artists and photographers, it may appear to be irrelevant to this discussion. However, in the case of instructional materials production, the possibility that professional credit may encourage exceptional work suggests that credit lines for all "contributing authors" be included whenever doing so does not compromise the effectiveness of the material.

2. The legal ownership of the works of regular and temporary employees of the institution should be made clear within the terms of the employment contract.

    A. The legal ownership of the copyrightable works of academic staff members should be formally assigned to the author(s), in a manner which grants the institution unrestricted intramural use of those works.

    B. The legal ownership of the copyrightable works of nonacademic staff members working on assignment (e.g., staff photographer, graphic artist, television director) should be retained by the employing institution, in a manner which grants the author unrestricted personal use of those works.

    C. The legal ownership of the copyrightable works of the institution's staff should remain subject to overriding contractual obligations which may exist.

The employment contract between the University and its employees (both academic and nonacademic) includes a clear and equitable arrangement for the management of the discoveries and inventions of the staff (30), but it provides no reference to copyrightable materials produced by the staff. It is necessary to search through several policies and regulations to discover the University's position on this important subject.

As discussed earlier, the employer may claim legal ownership of the original literary works of its employees, when prepared as a part of the employment relationship. The copyright statute permits the legal owner to transfer all, or any part of, his rights of ownership to another party, or to several parties. Thus, the Regents of the University can release some or all of their ownership rights to recorded instructional materials to the author(s) of those materials. We find that they have, in fact, done so:

> It shall be University policy that a copyright is the property of the individual author. Unless the work has been produced under specific contractual obligations, the author is free to do with his writings as he wishes (28).

In spite of the reference to "writings," this statement appears to be sufficiently broad as to include all works which are copyrightable under the terms of the Federal statute, including:

1. books . . .
2. periodicals . . .
3. lectures, sermons, addresses (prepared for oral delivery)
4. dramatic or dramatico-musical compositions
5. musical compositions
6. maps
7. works of art; models or designs for works of art
8. reproduction of a work of art
9. drawings or plastic works of a scientific or technical character
10. photographs
11. prints and pictorial illustrations . . .
12. motion picture photoplays
13. motion pictures other than photoplays. (21:14-15)

Thus, the Regents recognize that staff authors are the legal owners of their copyrightable works, including all forms of recorded instruction.[1] This generosity may seem excessive at first reading, but it is consistent with the basic interests of any institution of higher learning, which include, among other interests, a commitment to ". . . the advancement of learning (and) the spread of knowledge . . ." (31). The basic intent of the copyright law is to encourage authors to contribute to the common good through publication of their works; the incentive lies in the legal right to copy

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[1] Audio recordings are not copyrightable works under the current statute, and the status of videotape recordings is not clear, although they have been accepted for copyright. Literary works in both these categories, however, are protected by common law until they are published (21).

(publish) the work, and to receive due compensation through the sale of these copies. Public institutions for higher learning are established by the people for the common good, and these institutions work toward the common good through their staffs. Any incentives that seem appropriate beyond the basic compensation the staff receives, then, is properly directed to the staff, rather than to the institution. Even commercial organizations, established for private gain, often provide such incentives to their staffs, either by transferring legal ownership, or by paying royalties to the author(s).

We find, however, that a University regulation entitled "Production and Copyrighting of Teaching Aids" introduces a significant departure from this general policy. This regulation prohibits faculty from being directly involved in the sale or publication for sale of materials produced to meet the requirements of instruction, and prohibits both faculty members and departments from profiting from their sale. We may quarrel over what constitutes "direct" involvement, but it is clear that this regulation, whatever its original good intentions may have been (it was originally formulated in 1935, and is still in force), stands in direct opposition to the more recent policy quoted above.

Another important departure from this general policy is found in the "television policy," with respect to extramural use of television recordings prepared by faculty members for their instruction. This policy indicates that ". . . mutually satisfactory arrangements (must be) made between the faculty member and the University prior to such use" (29). It should be noted that these "arrangements" cannot include provisions for royalty payments to the author, unless the prohibitions of other applicable policies are waived (32, 33).

We may conclude that the University's present policies on the legal ownership of copyrightable works of its staff, while basically idealistic, have these shortcomings:

A. The basic policy is so broad as to permit the staff to deny the University access to copyrightable materials they have produced as employees, thus providing inadequate protection of the institution's interest in these materials. (The reference to "specific contractual obligations" suggests the employment contract, but no such obligations are included there, as already noted. Thus, unless specific contracts are drawn between the institution and extramural agencies, or, on unusual occasions, between the institution and its staff, the author's uses of his works are unrestricted.)

B. The policy statements cited are inconsistent with the University's policy which facilitates and regularizes profitable exploitation of the discoveries and inventions of the staff. Profits from such exploitation are distributed between the inventor/discoverer (as an incentive, presumably) and the University, primarily for the promotion of research (30). This patent policy is reproduced for reference as Appendix D.

C. The policies cited are also internally inconsistent in that they first extend unrestricted legal ownership to the author(s), and then deny rights which are normally available to the legal owner.

These shortcomings could be eliminated by developing a copyright agreement analogous to the existing patent agreement. Such a legal agreement, which should be a part of the employment contract, would provide needed clarity in the ownership of copyrightable materials produced by the staff as employees of the University, and would better protect the institution's proper interests in these materials.

3. Exemplary efforts in the design of instruction, or in the development of recorded instructional materials, should receive recognition by the academic community, particularly by those reviewing the individual's qualifications for promotion. Formalization of such recognition, through the award of prizes or other honors, should be encouraged.

Effective teaching and the ". . . development of new and effective techniques of instruction . . ." are recognized by the University as considerations for promotion (27:56). We must question the extent to which "effective teaching" enters into promotion and tenure deliberations, not because of any defect in the values of the responsible faculty committees, but because of the difficulty of identifying "effective teaching." In the terms of the present discussion, effective teaching may be defined as teaching which accomplishes its stated goals. With very few exceptions, instructors test the effectiveness of the student's effort to learn, rather than the effectiveness of their own efforts to teach.

Effective teaching should not be defined in terms of the amount of hardware that becomes involved, nor should the use of systematic instructional design techniques constitute prima facie evidence of excellence. It is important, however, that effective teaching be identified in terms of objective criteria which place appropriate weight on the validity of course objectives and on the demonstrated effectiveness of the instruction relative to those objectives.

We should also consider "efficient teaching" to be as praiseworthy as "effective teaching." An evaluation of an instructor's work by a committee of his peers should consider the costs of teaching as well as the benefits.

Some campuses of the University of California have already instituted programs of recognition for exemplary instructional efforts. This practice is not wide-spread, however, and should be extended: we cannot expect unusual efforts without unusual recognition.

IV. INSTITUTIONAL USES OF THE INSTRUCTIONAL SYSTEM

1. In the course of assigning legal ownership of copyrightable instructional materials to the academic author, the institution should claim the right to retain one or more "good" copies of the materials for unrestricted intramural use, to assure that the institution realizes benefit proportionate to its support.

The implications of the practice recommended in this statement may be considered in terms of both the efficiency and the effectiveness of instruction.

As a move toward efficiency, we may expect that policy based on this recommendation would lead to the development of a University-wide repository of faculty-produced teaching aids and recorded instruction. The existence of such a resource, freely available throughout the University system, would tend to reduce duplication of effort within the system, and would make large-scale instructional design projects economically feasible.

Considered in terms of instructional effectiveness, this central resource would make possible such activities as intra-campus exchange of recorded instruction, the development of University-wide survey courses, individual study of specialized courses from other University campuses, and the development on each campus of contributions to an integrated series of instructional materials.

Cooperative activities such as the development of a central resource of instructional materials may be regarded as a threat to the autonomy of the individual campuses of the University, but this threat is no more serious than the "threat" inherent in the inter-library exchange activity which has been helping to meet instruction and research requirements for some time.

Present policies of the University of California are not supportive of the development of such a resource. A provision of the "television policy" is that individual faculty members are given complete control over "subsequent presentation" of their recorded instruction (29). While it is possible that an academic author may permit the addition of his recorded instruction to a central resource, the development of such a resource would be seriously hampered by the need to secure releases on an individual basis.

This policy, at best, permits the development of local libraries of recorded instructional materials, with every subsequent use of those materials requiring the instructor's permission. Clearly, this circumstance suggests that we are far from achieving optimal intramural benefit from the efforts we extend to produce recorded instructional materials.

A. This intramural use should include the right to make duplicates of the material, but should not include the right to publish, loan, exchange, lease, or sell the material for extramural use, or for extension activities of the institution.

The rights reserved to the author are those which are properly his as the author. The rights, presumably, are protected by the University's present policy regarding copyright ownership (28). The University's policies which conflict with these rights have already been discussed in an earlier section, "Recognizing Authorship."

B. The institution's right to retain a copy (or several copies) of these materials should not imply an obligation to retain this copy for any minimum period of time. If the institution wishes to destroy its copy, the author should be given the option of purchasing that copy at a cost not to exceed the value of the raw materials involved. When the author purchases the only existing copies of the work, all rights to that work should be released to him. Once the author leaves the employ of the institution, the institution should be able to destroy its copies of that author's work at any time, without prior contact with the author.

This "housekeeping" clause is intended to clarify the institution's obligations to the author with respect to materials held in collection. The University of California has no clear policies in this area, and local policies have been developed ad hoc. The gains in flexibility which are inherent in non-commitment have been considered in many quarters, and will not be discussed here.

2. By claiming legal ownership of copyrightable works of nonacademic staff, the institution should be free to use the works for any purpose which is in the interests of the institution.

A. The institution's use should include publication and granting one-time publication rights to extramural agencies, but should not include the realization of direct profit.

B. In the event that exclusive rights to the work are desired by either the author or the institution, the granting of such rights should be accomplished by mutual agreement, and should involve no royalty payments. Unless exclusive rights are granted to the author, the original materials, or a duplicate of approximately equal quality, should remain the property of the institution. When exclusive rights are granted to the author, he should be sold the original materials at a cost not to exceed the value of the raw materials involved.

As already noted, the University's policy regarding copyright ownership may be interpreted to mean that the nonacademic author may use his works in any manner he chooses. The above recommendation is intended to reserve to the author only specified extramural uses of the work, including publication for profit. In practice, a nonacademic author must secure the University's consent to his extramural uses of the work; this consent should be based on the University's appraisal of the effect of the proposed use on the interests of the institution.

Again, a "housekeeping" clause is provided to clarify the relationship between the institution and the author with respect to the disposition of the materials and the ownership rights. As in the case of the works of academic authors, the University has no clear policies which pertain to these matters.

3. The established responsibilities of the individual instructor for the content and conduct of his instruction should be affirmed in the use of recorded instructional materials. Such materials, whether prepared by the instructor considering their use, or by others, should be used only when, in the judgment of the instructor, they are the best available means of meeting current instructional objectives. In no case should an instructor be expected, for economic reasons, to utilize recorded instructional materials which he regards as unsuitable in any respect.

This recommendation assumes that locally produced materials are available for unrestricted intramural use, and serves only to reaffirm the instructor's prerogatives with respect to his instruction. The University of California's policies are certainly satisfactory in this regard, and are only made more specific by a statement such as the one provided above.

4. Recommendations for the revision or withdrawal of recorded instructional materials should be the responsibility of the instructor currently responsible for the course for which the materials were prepared. Such recommendations should be based on the instructional value of the materials, and should be made with the costs of revision or withdrawal in mind.

This statement stands in direct conflict with the University's present policy regarding "subsequent presentations" of recorded instruction (29). The arrangement implied by the above statement assumes institutional ownership of the recorded material for intramural use, and provides a basis for continuing evaluation of the materials, even after the author leaves the University. Materials which are regarded as unsuitable for direct instruction need not, of course, be destroyed: they may be left in collection for reference in the same manner as books are retained in libraries after their contents have become out-dated.

5. It is anticipated that systematic instructional design and the preparation of recorded instructional materials may lead to long-range efficiencies in the use of faculty time and to reductions in the expenditure of institutional resources. In the disposition of such benefits, the institution should give first consideration to improvements in the instructional program.

The only reference to this issue to be found in the University's policies is in the "television policy"; the sense of this policy appears to be that materials recorded only for administrative convenience in scheduling may not form a basis for reductions in teaching load (29). The principle which may be inferred from this policy is consistent with the general notion that the economic benefits of recording instruction "belong" to the institution rather than to the instructor. The current policy does not speak to the issues which arise in the case of recorded instruction which remains available for use for subsequent classes. Presumably, reductions in teaching load would be available in such cases, by virtue of the omission of a statement denying the appropriateness of such reductions. It would not be inappropriate for the institution to apply these hypothesized benefits toward the reduction of teaching loads, of course, particularly if the additional time made available to the instructor were used to increase direct contacts with individual students.

V. PUBLISHING THE INSTRUCTIONAL SYSTEM

1. Staff authors have the prerogative to publish their works, and to select the method of publication. Should the staff author request one or more copies of his work for his personal use, including distribution, they should be provided at no cost to the institution. The institution, acting in its own interests, may elect to loan or to release the original version of the work to the author, rather than to provide copies; in such a case, the original work should be provided at a cost not to exceed the value of the raw materials.

This is another "housekeeping" provision, in this case providing a clarification of author rights within the sense of the copyright ownership policy which is current within the University of California (28). The University's interests in the work should be considered satisfied by the provision which permits the institution unrestricted intramural use of the work. Presumably, the original cost-benefit justification was based only on the benefits of this unrestricted intramural use, with no consideration of distribution potential. This consideration will be discussed further in the section immediately following. The reader is again referred to "Recognizing Authorship," in which conflicts between University policies are noted.

2. Should the author wish to cooperate with the institution in the publication of his work, a mutually acceptable formal agreement should be prepared between the author and the agency which represents the institution for publication and/or distribution activities. Generally, institutional involvement in the distribution of instructional materials should be undertaken in the interests of the advancement and spread of knowledge, rather than recovery of production costs and/or the generation of income beyond the costs of the publication activity. In the event that a net profit is realized, however, the agreement should provide for payment of 50% of this profit to the author(s), and 50% to the institution. In the disposition of net profits accruing to the institution, first consideration should be given to the promotion of research in instructional media.

Two sets of circumstances may arise which involve the University in the publication of recorded instructional materials. The first occurs when the materials are recognized as having publication potential after they have been justified and prepared on the basis of their intramural uses. The author may ask the University to cooperate in the publication of these materials, rather than turning to commercial publishing houses. In such a case, the University may wish to enter into the venture on a non-profit basis, even when some reasonable income accrues to the author.

The second set of circumstances arises when a project is proposed with part, or all, of the benefit justification being based on potential income from publication. In effect, the University is asked by the author to provide some or all of the production costs on speculation, rather than on the basis of demonstrable benefit to the instructional program. Such a venture may appear attractive to both parties, particularly when the costs of needed instructional materials can be provided in no other way. There are several dangers inherent in speculative ventures of this description, suggesting that close attention be paid to the conditions of the agreement that is prepared.

Commercial practices provide several models on which such an agreement may be based. Generally, the author relinquishes some of his rights to the finished work in exchange for the investment made by the producing agency. The University should make such an investment only when expert judgment suggests that costs will be recovered, and when potential losses can be absorbed by available funds. These considerations are more or less evident to the experienced fund administrator.

There are, however, other institutional interests which must be protected in such circumstances. Care should be taken, for example, to assure that the design of instructional materials is not compromised significantly in order to enhance distribution potential. Care should also be taken to avoid commercializing the activities of the University; the competitive instinct should be recognized, and kept in perspective relative to the basic commitment to the instructional program. This perspective becomes very difficult to maintain when net profits accruing to the institution are made available directly to the producing organization.

Pertinent University of California policies appear to be nonexistent in this area, except for the model provided by the "patent policy" (30). Local practices have been developed on an ad hoc basis, demonstrating that the need exists for a uniform policy regulating the University's involvement in the publication of instructional materials produced by the faculty.

VI. COPYRIGHTING THE INSTRUCTIONAL SYSTEM

1. The decision to copyright instructional systems, including recorded instructional materials, should be the prerogative of the legal owner (who may be either an academic staff member, the institution, or a non-academic staff member who has been granted ownership of his work by the institution).

    A. Should the author wish to copyright his work in his own name, such action should be taken in a manner which leaves the institutional rights to that work unaffected. In such a case, the institution should relinquish its rights when the author can demonstrate that such action would be consistent with the interests of the institution.

    B. Should the author wish to copyright his work in the name of the institution, a request for such action should be submitted to the appropriate officer of the institution, and should be acted upon in the manner prescribed by the policies and regulations of the institution. Since the institution's interests in extramural use will be characterized by a dedication to the advancement and spread of knowledge, copyrighting works in the name of the institution should be considered only when it will contribute to the general availability of the materials at the lowest possible cost.

The recommendations in the above statements are consistent with current policies of the University of California (28, 32, 34). These recommendations are somewhat more specific, however, since they assume that the University has retained specified rights to the copyrightable works of its employees, as recommended earlier.

SUMMARY AND CONCLUSIONS

The policies of the University of California have been reviewed to determine the extent to which they are congruent with the conclusions of the base report. It was found that current University of California policies provide only limited guidance with respect to the development and management of instructional designs, particularly when locally produced instructional materials are involved. It was also found that current policies have many areas of internal contradiction, particularly as they affect the rights of the author and the rights of the University relative to those materials.

Appropriate revision of these policies would facilitate and encourage the use of recorded instructional materials, and the development of new, more effective forms of instruction.

This study concludes with the following recommendations for future University-wide policy development in this field:

1. A thorough review of all University policies, Presidential Directives, and other relevant internal communications should be conducted to develop a detailed statement of the University's current position with respect to the design, development, ownership, and use of instructional designs, including recorded instructional materials. This statement of position should then be reviewed to assure that it coincides with the current requirements, philosophy, and interests of the institution and its faculty.

2. A comprehensive, clear, and equitable University-wide policy on instructional design, including recording instructional materials, should then be developed to provide guidance to the campuses. This general policy on instructional design should:

    A. Specify the cost-benefit parameters to be considered in developing major projects of instructional design, including those involving recorded instructional materials;

    B. Establish the University's recognition of the authorship of instructional materials in all media, and of creative contributions to the authorship of such materials;

    C. Clarify the ownership of copyrightable instructional materials produced by academic and nonacademic staff as employees of the University;

D. Establish the availability of instructional materials produced with University resources for intramural instruction and research;

E. Specify the nature of University involvement in the loan, rental, or sale for extramural use of instructional materials produced with University resources.

APPENDIX A: SURVEY OF UNIVERSITY OF CALIFORNIA TELEVISION OFFICES

UC, Campus A

Released Time: No experience, due to the youth of the production activity. It is anticipated, however, that a modest amount of faculty time will be supported by an Educational Improvement grant. Thus far, this support has been requested for incoming faculty who will be teaching in the new medical school. If the program is successful, similar funds will be requested for other teaching activities within developing areas of the campus. It is anticipated that newly arriving faculty within new colleges will be more receptive to the use of television media in instruction.

Management of Finished Programs: Experience, of course, is also limited in this case, although the various conditions stated in medical research contracts and grants are expected to preclude the need for a local campus policy in this area.

UC, Campus B

Released Time: No statement.

Management of Finished Programs: Although no written policies have been prepared, the practice is that the faculty member/author and his department jointly approve requests for use of videotapes on an *ad hoc* basis. Given appropriate approvals, the television office will loan tapes to requestors under the terms that no admission charges will be made to viewers, and that no duplicates will be made. The faculty member/author *may* have the right to require that his tapes be erased when he leaves the employ of the University, but this right has not been tested.

UC, Campus C

Released Time: Released time for television activity has been granted only rarely--and then on a non-formal basis. The Biology professors who mounted the original Biology 1A course were given some time compensation based, roughly, on the number of videotapes they were required to produce. The Educational Television Department has avoided giving formal recommendations regarding released time but has consistently provided data from other institutions and has encouraged professors and their departments to work out on a case-by-case basis some reasonable released time guidelines. The

Administration has been quite willing to cooperate in providing aid to departments who wish to begin using television and other learning media in their large undergraduate courses.

Management of Finished Programs: No formal, written policy has been developed: each case is treated *ad hoc* but with the overriding understanding that all services and materials for televised instruction as an integral part of undergraduate course series are on a non-recharge basis. Videotapes of direct instruction are erased only with the approval of the professor and his department and *all* replays of videotapes are made with the specific approval of both. The tape required for "resource recordings" (to be used at an unspecified later date) is normally provided by the ETV department unless it becomes obvious that a department is abusing the privilege by holding videotaped materials for extended periods of time with little or no utilization.

UC, Campus D

Released Time: The Television Office has been active in encouraging department chairmen to recognize the importance of released time in television production, but the matter has never been resolved to the point of a definitive policy.

Management of Finished Programs: No statement.

UC, Campus E

Released Time: No experience, due to the youth of the campus.

Management of Finished Programs: No local policy is available in this area. The practice of the Television Office is to regard instructional materials produced with the resources of the University as the property of the Regents. Policies in development would require faculty to permit, at the discretion of the Director of the Television Office, one or more copies of these materials to remain in the campus' central reference collection of non-book instructional materials for intramural reference uses in perpetuity. Faculty authors desiring personal copies of their recordings are required to reimburse the University for the cost of raw materials and staff time required to prepare the duplicates. No restrictions are placed upon the author's uses of his own personal copies of his recordings except as otherwise agreed prior to production.

UC, Campus F

Released Time: No experience; the television production activity is in process of development.

Management of Finished Programs: No experience. Problems are expected to arise as television activity grows, since present campus policies do not provide adequate guidance in this area.

UC, Campus G

Released Time: Because of the nature of the materials being produced, released time is usually not needed or requested. In those cases when released time is needed, the amount of time provided is determined by the department head and the instructor, with reference to the requirements of the project. In most cases, faculty members have found that the later savings in instructional time are sufficient to justify undertaking the recording project.

Management of Finished Programs: Individual departments provide funds for the raw tape, and are regarded as the "owners" of the finished recording. Arrangements for subsequent use are arranged ad hoc by individual faculty member/author and his department; television staff generally are not involved in such arrangements, except that they hold the tape. The television office may provide raw materials in some cases, on the condition that it is either erased for re-use or purchased by the requesting department within twelve months.

UC, Campus H

Released Time: No experience, due to the youth of the campus.

Management of Finished Programs: Again, no significant activities have yet been experienced, and no policy statements pertinent to the issues involved have been developed. The question of faculty rights with respect to student recordings of lectures has stimulated a series of discussions which are expected to lead to a uniform policy covering all recorded instructional materials.

UC, Campus I

Released Time: Experience to date indicates that faculty members generally are not given released time from other instructional duties in order to carry out television work. Most faculty members devote their non-instructional time to research and publication activities, although some members have spent considerable time in the development of televised instructional materials without released time.

Management of Finished Programs: Ownership rites are clearly assigned to the Regents of the University of California, although a faculty member and his department are given control over the use of the finished product. A faculty member can require that a tape be erased when he considers it to be outmoded. If the University receives income from distribution of the product, the faculty member may be assigned part of the income, although such payments are discouraged in favor of payment made of part of the initial production for materials which are to be distributed. If a faculty member leaves the employ of the University, his videotape may not be used without his written authorization and the Chancellor decides the conditions under which copies of the videotapes are made available to the faculty member.

APPENDIX B: PERTINENT POLICIES AND REGULATIONS OF THE UNIVERSITY OF CALIFORNIA

Production and Copyrighting of Teaching Aids (September 15, 1951)

In order to clarify further policy concerning the production and copyrighting of syllabi or other supplemental teaching aids by individual faculty members or departments for intramural use, the following summary of policy and procedures, put into effect in 1935 and subsequently, is issued as a regulation:

1. Members of the faculty should not engage personally in the sale or publication for sale of syllabi or other supplemental teaching aids required for class instruction within the University. It is desirable that supplemental teaching aids intended primarily for sale to students of the University of California be produced by the University Press which maintains a revolving fund for this purpose. However, if special reasons exist, they may be produced by other recognized publishing firms. They should be sold only by the Associated Students store or other student supply stores.

2. Exceptions to this rule should be made only when, in the judgment of the Chairman of the Department or the Dean of the College concerned, a time or expense factor makes it impossible to meet essential teaching responsibilities other than by emergency methods, and when the material for which students are asked to pay involves only a nominal cost. In no case should material be sold for the profit of the faculty member or the department.

3. Departments may produce and distribute any syllabi or other teaching aids which are considered useful in meeting the teaching responsibility, in the most practical available way, if no charge is made for them, and there are free funds for them in the budget.

4. If it seems desirable to copyright syllabi or other teaching aids in the name of The Regents of the University, a request for this action should be addressed to the Manager of the University Press, and, if the material has not been produced by the University Press, two copies of the item to be

copyrighted and $4.00 to pay the copyright fee should be transmitted. Attention is called to the fact that mimeographing, as well as printing of material excerpted from other copyright publications without the consent of the author, is an infringement of copyright.

Untitled Policy on Copyright Ownership (April 24, 1961)

The University Patent Board, or individual members thereof, are frequently approached by authors asking what their obligations are to the University insofar as copyrights are concerned. The Patent Board has requested an opinion of the President on this subject.

It shall be University policy that a copyright is the property of the individual author. Unless the work has been produced under specific contractual obligations, the author is free to do with his writings as he wishes.

The decision as to necessity for copyright will, in general, rest with the originator or originating department.

Policy on Use of Recorded Televised Lectures for Instruction (October 23, 1962)

The offering of particular courses of instruction as well as the content, methods, and techniques of the presentation of that instruction are the domain of the individual instructor and his academic departmental organization, subject to the supervision and review of the Academic Senate[1] and its Committee on Courses of Instruction. It is axiomatic that the traditional methods of instructional presentation should be periodically evaluated in the light of new experiences, new research, and new educational media. The appropriateness of television to a particular course presentation must be judged on an individual basis, taking into account such objectives as: improvement in the quality of instructional presentation; more efficient use of faculty; more efficient use of instructional space, instructional facilities or materials.

In order to preserve and maintain the quality of instruction in courses where this medium is employed, and to define the interests and authority of the instructor over the use of this medium, the following general policies shall apply:

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[1] Standing Order of The Regents Chapter IX 2 (b) "The Academic Senate shall authorize and supervise all courses of instruction in the academic and professional colleges and schools, except in professional schools offering courses at the graduate level only . . ."

1. The decision to use television as the medium of transmitting an instructor's lectures and/or demonstrations to his students shall be that of the individual instructor and his department chairman. The content and the conduct of such courses, as of courses taught by traditional methods, is subject to the review and supervision of the Academic Senate Committee on Courses of Instruction.

2. Active and responsible participation of the student is important in any method of instructional presentation, and it is of particular importance when the medium of television is employed. Opportunities beyond the televised lectures of demonstrations for student initiative and for personal contacts between students and instructors should be provided through such means as frequent discussion section meetings or laboratory periods, facilities for student questions, individual consultation, writing and criticism of papers and examinations, and the availability of collateral reading and illustrative materials.

3. The preparation of televised lectures and demonstrations, particularly when courses are being restructured for the first time for the change from conventional to televised methods of presentation will require extra preparatory work on the part of the instructor. The amount of extra work involved will vary according to the discipline and manner of its presentation. The academic department chairman should decide on an individual case basis the amount of adjustment in the instructor's assignments which might be desirable to insure both standards of competent teaching and reasonable teaching load.

4. If lectures or demonstrations are recorded only for purposes of repetition to those sections of the class not meeting concurrently with the "live" presentation, and when such tapes are erased for successive re-use, such extra class sections shall not be considered as an addition to the teaching load assignment except for any extra student and teaching assistant supervision which may be required.

5. Faculty members whose lectures or visual demonstrations are permanently recorded or filmed should be given such control over subsequent presentation of that material as may be necessary to protect students from obsolescent teaching and teachers from damaged reputations.

6. Release of recordings to other institutions or to broadcasting stations may be made only if mutually satisfactory arrangements are made between the faculty member and the University prior to such use.

7. Television lectures and/or course presentations organized by University Extension on an overtime arrangement shall be subject to individual agreements on compensation and re-use.

University Copyright Regulation (November 1, 1962)

The following regulation concerning the administration of copyrights has been developed in consultation with the Council of Chief Campus Officers.

This regulation concerns the administration of copyrights obtained in the name of The Regents of the University of California.

Administration of copyrights involves two somewhat different responsibilities:

1. The obtaining of copyrights.

2. The granting of licenses to use material protected by copyright.

Obtaining Copyrights

The following officers are authorized to obtain copyrights on behalf of The Regents for material produced within their administrative units:

Chief Campus Officers
University Dean of Agriculture
Dean of University Extension
Director, University Press
Chief Publications Officer.

This authority can be further delegated within each such unit as desired.

Each officer authorized to obtain copyrights will maintain a central file of copyrights secured under his jurisdiction and will be responsible for renewal of copyrights as necessary.

Granting Licenses

Section 3(d) of Chapter XII of the Standing Orders of the Regents states:

> (d) The President of the University is authorized to grant licenses for the use of copyrighted materials for consideration not exceeding in any case one thousand dollars ($1,000).

All previous grants of authority to issue licenses for use of copyrighted material are cancelled and the President's authority is hereby delegated as follows:

> Officers authorized to obtain copyrights are given authority to grant licenses for use insofar as the President has such authority under the Standing Orders. With the exception of the Director, University Press, and Chief Publications Officer, officers may further delegate authority to grant licenses to the extent they deem necessary.

The General Counsel has prepared a standard license form (which may be obtained through Chief Campus Officers) and its use will relieve officers granting licenses from the necessity of seeking legal advice or of informing General Counsel each time a license it issued. In the event a license is granted free, paragraph 2 can be deleted from the form.

Officers granting licenses have the responsibility to determine what consideration (up to $1,000) is to be asked in exchange for a license. Payments will be made to The Regents of the University of California and will be credited to the general University funds, except in the case of books published under contract by University Press. Officers granting licenses will maintain a central file of all licenses given.

If a consideration in excess of $1,000 seems appropriate in exchange for a license, the matter will be referred to the President who in turn will present to the Board of Regents.

Interpretation of Policy

This regulation should not be interpreted as expressing any desire of the University's administration to modify existing policy with the object of increasing the number of copyrights owned by The Regents, or requiring staff members to assign their copyrights to The Regents. The previous regulation on this subject, dated April 24, 1961, still in force, states (ed.: quotes policy reproduced earlier in this Appendix section).

The effective date of the regulation is November 1, 1962.

APPENDIX C: RELEASE FORMS IN USE WITHIN THE UNIVERSITY OF CALIFORNIA

NOTE: The forms reproduced in this section represent only a random sample of the forms in current use. Although forms vary somewhat, the common elements appear to be (1) that the speaker/performer releases all of his rights to the recording to The Regents, and (2) that The Regents' rights are limited only by the provision that no direct profits may be derived from their uses of the recording.

Release Form: U.C. Berkeley

As an incident to our understanding that I shall ________________ ______________________________________ on the campus of the University of California at Berkeley on ________________ (date), I hereby release and grant to The Regents of the University of California, a corporation, (hereinafter called the "University") its officers, agents and employees, the exclusive rights to the videotape ____ RECORDED __________________________ by the University Television Office. Subject to any conditions stated below, the University shall have the right to use all or part of said videotape recording for any lawful purpose which the University, in its sole discretion, may seem desirable, including but not limited to the right to publicly present the videotape recording, to make and distribute copies of the videotape recording including film transfer and to broadcast the videotape recording by closed circuit television and broadcast transmission or to permit others to do so; provided, however, that neither the University nor I, directly or indirectly, shall be entitled to receive or shall accept any financial or material consideration for making use of the videotape recording other than direct distribution costs. If other persons or organizations are granted permission by the University to broadcast or to publicly present the videotape recording, the receipt of direct profits shall be expressly prohibited.

CONDITIONS:

Dated: ________________ Signed: ______________________________

SPONSORING AGENCY: ____

Release Form: U.C. Los Angeles

The undersigned hereby transfers and assigns to The Regents of the University of California the exclusive right to use and to authorize others to use all or any part of my participation in the program (Program Title) ____

____

for all educational broadcasting purposes (including without limitation, the right to broadcast the program over educational television stations providing that the broadcast of such programs is on a so-called "sustaining" basis and not commercially sponsored) and audio-visual school of instruction and other similar educational purposes in perpetuity throughout the world. This does not include the rights to use these programs for commercially-sponsored broadcasting.

The undersigned also hereby transfers and assigns to The Regents of the University of California the exclusive right to use and authorize others to use all or any part of my participation in the program for all books, magazines, pamphlets, or other written purposes.

The undersigned participated in these programs as (Patient, Demonstrator, Panelist, etc.) ______________________________

____

Printed names of participant: ______________________

Signature of participant: ________________________

Date: ____________________

1. All persons participating in programs must sign this form BEFORE the television program is produced.

2. If a participant is under 21 years of age, a parent or guardian must sign this form.

3. All forms must be returned to: Mr. Frank E. Hobden, Director, Academic Communications Facility, University of California, Los Angeles, 405 Hilgard Avenue, Los Angeles, California 90024.

Release Form: U.C. Santa Cruz

Participant: ______________________________
Title of Event: ______________________________
Recorded by: ______________________________

Audio Recording	Date of Recording: ____________
Video Recording	Approximate Running Time: ______
Motion Picture	Location of Recording: __________

OPTION 1 (Unrestricted)

I hereby give my consent to The Regents of the University of California, or their delegated representatives, to record my participation in the event described above. Further, I hereby authorize The Regents, or their delegated representatives, to use or permit other persons to use the recording for such purposes and in such manner as may be deemed appropriate for educational or research purposes.

Signed: ______________________________ Date: ______________

OPTION 2 (Restricted)

I hereby give my consent to The Regents of the University of California, or their delegated representatives, to record my participation in the event described above. Further, I hereby authorize The Regents, or their delegated representatives, to circulate, distribute or replay the recording as reference material for authorized users of the University Library on the campus of origination only. Except for purposes of direct instruction and research on the campus of origination, no copies, duplicates, or transcriptions of this material are to be authorized or distributed without my written consent.

Signed: ______________________________ Date: ______________

License Agreement: University-Wide

This License Agreement is made and entered into this ______day of __________, 19___, by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, hereinafter called "Licensor," and ____,
a____
having an address at ____
____,
hereinafter called "Licensee";

WITNESSETH:

WHEREAS, Licensor owns and is the proprietor of the copyright of and to a publication entitled "____________________________________"; and

WHEREAS, Licensee desires to obtain from Licensor, and Licensor desires to grant to Licensee, a license to publish and use (portions of) the aforementioned publication;

NOW, THEREFORE, in consideration of the mutual covenants, conditions, and terms hereinafter set forth, and for other good and valuable consideration, the parties hereto hereby agree as follows:

1. Licensor hereby grants to Licensee a nonexclusive, nontransferable and revocable license to publish and use (the following portions of) the aforementioned publication (________________) in connection with ____
____.

2. Licensee, for and in consideration and as a condition of granting this license, hereby agrees to pay over to Licensor $______________.

3. Licensee, for and in consideration of and as a consideration of granting this license, hereby agrees to indemnify and hold harmless and release and forever discharge Licensor, its agents, officers, assistants, and employees thereof, either in their individual capacities or by reason of their relationship to the Licensor and successors, from any and all claims and demands whatsoever which Licensee and any or all other persons have against the Licensor, or any or all of the above mentioned persons or their successors, by reason of any accident, illness, injury, damage, or other consequences arising or resulting directly or indirectly from the license herein and hereby granted and occurring at any time subsequent to such grant of license.

4. In any publication to be made pursuant to this license, Licensee shall include an acknowledgment of the source of the material contained in such publication and shall indicate that such material is copyrighted and that permission for the publication or other use thereof may be granted only by Licensor.

5. This license shall commence on the date hereof and shall extend to_________, 19___. In any event, this license may be earlier terminated by written notice from the Licensor to the Licensee, delivered to the said Licensee in not less than 60 days prior to the date on which the license is to terminate.

IN WITNESS WHEREOF, the parties hereto have hereinafter executed this agreement on the day and year first above written.

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

By_____________________________
LICENSOR

____
LICENSEE

APPENDIX D: UNIVERSITY OF CALIFORNIA'S PATENT POLICY

Preamble

The Regents of the University of California are disposed, as hereinafter stated, to assist members of the faculties and employees of the University in all matters related to patents based on discoveries and inventions developed in situations where the invention has been conceived or developed by them.

It is recognized that such inventions may, and frequently do, involve equities beyond those of the inventor himself. The use of University facilities or services, the particular assignment of duties, or conditions of employment, the possible claims of a cooperating agency, as in research supported from extramural funds; these and other situations may give rise to a complex of interrelated equities or rights involving the inventor, the University, and a cooperating agency. Such rights or equities must be appraised and an agreement reached on the proper disposition of them. It is further recognized that the 15th All-University Faculty Conference of 1960 adopted a resolution urging further use of inventions as a source of intramural funds for research within the University. Therefore, to appraise and determine relative rights and equities of all parties concerned, to facilitate patent applications, licensing, equitable distribution of royalties, if any, to obtain funds for research, and to provide a uniform procedure in patent matters where such originate within the University, the policy herein set down is adopted.

Statement of Policy

1. All matters relating to patents in which the University of California is in any way concerned shall be administered by an agency known as the University of California Board of Patents.

2. A. The Board of Patents shall be appointed by The Regents. It shall have full power of organization, except as hereinafter provided, subject to the provision that it meet at least once a year; and the members shall serve without extra compensation at the pleasure of The Regents. The normal term of appointment shall be for three (3) years.

   B. The Board shall consist of ten (10) persons selected from the faculties, the administration of the University, and such other groups as The Regents may determine, but of this number the Chairmen of the Committees on Research, Northern and Southern Sections of the Academic Senate, shall be ex officio members. The Chairman of the Board and an Administrator of Patents shall be approved by The Regents upon the recommendation of the President of the University.

3. The following powers and duties shall be exercised by the Board of Patents:

   A. To appoint a committee of experts to examine the merits of each potentially patentable invention and to cause such committee to report its findings to the Board.

   B. To determine the relative equities or rights held by the inventory and The Regents or by a cooperating agency, if any, and to reach an agreement among all parties concerned with respect to such equities.

   C. To authorize applications for patent and to retain patent counsel, in association with the General Counsel, for matters pertaining to the filing of patent applications, the prosecution thereof, and the litigation that may arise therefrom.

   D. To release patent rights to the inventor in unusual circumstances where the equities so indicate, subject to his granting a shop right to The Regents.

   E. To negotiate licenses and other agreements covering the manufacture, use and sale or lease of patented articles, or processes resulting from patents or inventions.

   F. To arrange for and direct the collection of royalties and fees and the distribution thereof to those entitled thereto.

   G. To assist in negotiation with appropriate University officers to obtain from cooperating agencies agreements concerning patent rights to inventions or discoveries made as a result of research carried on under grants or contracts.

H. In its consideration of matters relating to each particular patent case or situation, the Board of Patents shall take into consideration the principles laid down in the patent laws and in the court decisions of the United States.

I. To make such reports and recommendations to The Regents as The Regents shall direct.

4. Members of the faculties and employees shall make appropriate reports of any inventions they have conceived or developed to the Board of Patents.

5. An agreement to assign inventions and patents to The Regents of the University of California, except those resulting from permissible consulting activities without use of University facilities, shall be mandatory for all employees, academic and nonacademic. Releases shall be executed, where the equities so indicate, as determined by the University of California Board of Patents. Subject to overriding obligations assumed by The Regents, University faculty and staff members who are employed under research contracts, grants in aid or service to industry agreements or special State appropriations covering specific activities shall make such assignment of inventions and patents as is necessary in each specific case in order that the University may discharge its obligations, expressed or implied, under the particular agreement.

6. The Regents are averse to seeking protective patents and will not seek such patents unless the discoverer or inventor can demonstrate that the securing of the patent is important to the University.

7. The Regents agree, for and in consideration of said assignment of patent rights, to pay annually to the inventor, his heirs, successors, and assigns, 50% of the royalties and fees received by The Regents after a deduction of 15% thereof for overhead costs plus a deduction for cost of patenting and protection of patent rights. Distribution shall be made annually in January from the amount received during the penultimate year. In the event of any litigation, actual or imminent, or any other action to protect patent rights, The Regents may withhold distribution and impound royalties until resolution of the matter.

Approved by the Board of Regents, May 17, 1963
Effective July 1, 1963
Revised July 1, 1967

APPENDIX E: EXCERPT FROM CURRENT PROGRAM OF THE REGENTS' OPPORTUNITY FUND

Innovative Projects in University Instruction

New instructional technologies and experimental approaches to the organization of the learning process are of crucial importance to the University. The Regents therefore have approved an allocation of $488,000 for 1968-69 to support special innovative projects in instruction. These funds are intended to assist University faculty members, singly or in groups, in the design and execution of innovative or experimental instructional projects and may be used in a number of ways, for example, to provide released time if the project requires and warrants it; to purchase equipment and materials; to provide technical assistance.

Chancellors are requested to stimulate interest in innovative instructional projects and to solicit from the faculty and staff proposals for such projects. The channels for submission and review of proposals at the campus level are to be established by the Chancellor. If a project is deemed worthy of recommendation by the Chancellor, he should apply to the Office of the President attn: Vice President Taylor for budgetary support for the project. He may make such application for several projects but if so he should indicate his desired priorities. Each application should describe fully the nature and proposed duration of the project and the budgetary support requested, with details such as names of faculty members who will participate, the type and amount of support (salaries, general assistance, supplies and expense, equipment).

APPENDIX F: UNIVERSITY RELATIONS DRAFT POLICIES

NOTE: The following has been reproduced from the University Relations Manual (3-15-66), with the permission of University Relations. Although these statements are not intended to affect existing policies relative to instructional films or television recordings, as noted, they are included here for reference because they may have some bearing on future policies which are developed.

Artists-Photographer Credit Lines

1. No printed credit is given to a designer who receives a normal fee to do a layout or artwork for a University publication.
2. Credit may be given where layout is provided without a fee.
3. Credit may be given for the art work that is reproduced in a publication, unless the work was contracted for use in the publication, in which case the policies above apply.
4. Similar policy applies to use of photographs; if print is purchased, no credit is given, etc.
5. Exceptions to these policies on professional credits may be made by Chief Campus Officers, University Deans and the Chief Publications Officer when special circumstances justify.

Visual Communications[1]

For purposes of this chapter, the term "Visual Communications" is defined as motion pictures, television, slides and slidefilms.

With respect to such productions designed for external use (i.e., the general public or specified segments thereof), the Vice President-Administration is responsible for supervision of policy, including approval prior to release of all University-wide or multicampus materials, post-audit and coordination of the University's total external Visual Communications program.

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[1] It should be noted that nothing in this Chapter is intended to restate or change existing University policies with regard to the use of films or television as an instructional instrument. Policy statements on this subject are contained in the University Bulletin and Administrative Manual (October, 1962) and in President Kerr's Directive of November 5, 1962.

I. Organization.

The external visual communications program shall be supervised by the Vice President-Administration through the Communications Production Manager, who has the following general responsibilities:

A. The organization and development of University-wide Visual Communications programs, including:

1. Serving as consultant and technical resource advisor to individual campuses for their external communications programs.

2. Responding to requests for film, television and slides from institutions and organizations outside the University (under policies set forth below).

3. Producing motion pictures, television and slide-films of a University-wide or multi-campus nature.

B. Implementing policies of The Regents concerning:

1. Copyright of films, whether produced photographically or electronically (motion pictures, videotapes, kinescope transfers).

II. Controlling Policies.

A. Copyright of motion pictures and television programs.

1. All motion pictures and television programs produced in or by the University shall be copyrighted in the name of The Regents, when in the judgment of the President there has been sufficient involvement of the University to warrant such action. The President's determination will be based on the degree of use of University equipment or materials, staff time, and academic supervision.

2. The Regents may elect on occasion to make royalty agreements concerning division of proceeds of rentals and/or sales.

B. Production of Visual Communications.

1. Visual Communications produced for individual campus

Public Information offices (external use) or for academic departments, research units or institutes on a single campus (internal use) shall be the responsibility of the Chancellor.

2. Visual Communications produced by individual campuses for external use shall be supervised by the Vice President-Administration in this manner:

   a. Counseling on script preparation.

   b. Counseling at each stage of production to assist in achieving uniformity, economy and full use of available University resources.

   c. Post-audit.

3. It is recommended that each campus centralize Visual Communications facilities, equipment and materials (as in an Academic Communications Facility) in order to prevent costly duplication and to provide well-maintained equipment, on an economical basis, to both administrative and academic departments.

4. University-wide, inter-campus or multi-campus Visual Communications programs shall be supervised by the Vice President-Administration as set forth in 2. above.

C. Programs Originating Outside the University.

As a general policy, such programs whose scope is University-wide shall be the responsibility of the Vice President-Administration; programs dealing with individual campuses shall be the responsibility of the Chancellor, with assistance from the Vice President-Administration as detailed below.

1. In the preparation of Visual Communications undertaken by agencies outside the University (including, but not limited to television stations and networks, government agencies, educational film producers, other institutions of higher learning and foundations), it shall be the responsibility of the Vice President-Administration to assist in establishing liaison with relevant academic or administrative departments.

2. University-owned film or videotape footage, or such footage over which the University has jurisdiction, should be furnished to outside agencies by individual campuses only

after consultation with the office of University Relations. Each request should specify intended use and sponsorship, and provision should be made for script clearance.

3. Credit for University assistance of the type covered in 1. and 2. above shall appear on such productions in accordance with current industry practice and at the discretion of the University.

D. Central Film Index.

1. The office of University Relations has organized and shall maintain a Central Film Index, which provides a detailed cataloguing of both completed motion pictures and footage (derived from photographic or electronic sources) existing at campuses, field stations and institutes.

2. Following initial reports of all such motion pictures and footage existing in the University, new films and footage shall be reported as they become available.